Napa County Roads

State of the System

Roads Presentation to the Board of Supervisors

August 28, 2007

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Introduction

The Roads Division of the Napa County Department of Public Works is responsible for providing the public with a safe and reliable road system, by protecting the County's investment in a 446-mile system of roads, bridges and drainage structures in the unincorporated area.

The County road system includes three types of roadways:

- Local or rural roadways carry less than 1,000 vehicles per day.
- Collector roads collect traffic from local roadways and serve as access to adjacent land. They carry between 1,000 and 5,000 vehicles per day.
- Arterial roads function to connect collector roads to highways and other major arterials. They carry at least 5,000 vehicles per day.

The majority of the road system consists of paved roads; however, the County is also responsible for maintaining approximately nine miles of dirt roads in the northeastern corner of the County.

During the 2007-2008 budget hearings, The Board of Supervisors acknowledged that road maintenance is under funded and requested additional information from staff, including:

- Programs supported by the Roads budget;
- Revenue sources available to the Roads budget;
- Benchmarking data for the Napa County road system compared to like data for other Metropolitan Transportation Commission (MTC) counties and other rural counties that attract tourism;
- Benchmarking data for investment per mile of MTC counties and other rural counties that attract tourism; and
- Programmatic and financing alternatives.

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Executive Summary

A Metropolitan Transportation Commission (MTC) analysis done in 2004 indicated that the condition of Napa County's roads is among the worst in the Bay Area. It further found that an investment of $201 million is needed, above the present level of service, over a 25-year period to bring all paved roads into a "good" Pavement Condition Index (PCI) rating level and to provide for other maintenance needs that go beyond the minimum level of service currently provided. The $201 million was stated in current year dollars and did not consider the impact of inflation. Assuming a minimum annual inflation rate of 3%, $293 million would be needed over a 25-year period, or $11.7 million per year above and beyond the current program expenditures of about $7 million a year.

The MTC analysis underscores that the Department faces two issues impacting its Roads Program.[1]

- There is a structural imbalance between operating revenues and expenditures for Maintenance activities that, if not addressed, will eventually require reductions to a program presently operated at a minimum level of service.

- The present Surface Treatment Program is inadequate to enable the County to raise its PCI rating to an acceptable level.

Roads discretionary revenue comes from five basic sources: Gasoline taxes; Proposition 42; Intermodal Surface Transportation Efficiency Act (ISTEA) Exchange and Match program; County General Fund; and Permits and reimbursements for services. In addition, the 2007-2008 Roads Fund includes some restricted revenue from grant funding and some one-time revenue from Proposition 1B.

The Public Works Department concentrates the largest portion of discretionary revenue on maintenance activities, as they are essential services that provide for the safe day-to-day operations of our roads for the traveling public. Given the structural imbalance between operating revenues and expenditures, the Department has opted to use one-time Proposition 1B revenue primarily as the match for the capital projects in the budget, instead of funding new, stand-alone Surface Treatment projects. The alternative would have been to reduce the level of service for maintenance programs.

Gasoline taxes and Proposition 42 revenue represent 72% of discretionary Road Fund revenue. The annual direct return of gas tax dollars from Gasoline taxes and Proposition 42 (taxes "paid at the pump") amounts to only $28 per registered vehicle in the county. The current formula on gas tax dollars has not been indexed for inflation, and is based on gallons sold without respect to sales price. As fuel prices have escalated, and as vehicles become more fuel efficient, revenue has not kept pace with the cost to maintain the roads.

[1] The major components of the Roads Program are Maintenance, Surface Treatment Programs, Other Road Improvements, Overhead/ Support Services and Declared Emergencies, as discussed beginning on page 5.

The limited discretionary revenue, and the use of Proposition 1B revenue as described above, does not allow sufficient funds to increase the County's Surface Treatment Program beyond what we obtain from Federal sources, nor do we have the ability to set aside funds for future declared emergencies.

The financial condition of the Road Fund is precarious at best. The Fund Balance has been declining over the years. Based upon an analysis provided by the Public Works Department during 2007-2008 budget hearings, it is anticipated that expenditures will exceed revenues by approximately $500,000 in Fiscal Year 2011-12 for minimum level of service maintenance activities. The County will have to identify an additional source of sustainable revenue for maintenance activities, as well as for the Surface Treatment Program, or make significant program reductions in future fiscal years.

With the exception of one program component (Declared Emergencies), the chart below summarizes this fiscal year's program, revenue types and sources *(in millions):*

Activity	Discretionary Revenue	Restricted Revenue	One Time Revenue	Total Revenue
Maintenance	$4.2	$0.0	0.1	$4.3
Overhead/Support Services	$0.7	$0.0	0.0	$0.7
CIP: Surface Treatment Program	$0.0	$0.9	0.4	$1.3
CIP: Other	$0.0	$0.9	0.2	$1.1
Total	$4.9	$1.8	$0.7	$7.4

Program Components:

Maintenance

Maintenance is dedicated to labor-intensive activities that provide for the convenience and safety of the traveling public, as well as other related activities that impact the total maintained road mileage for Napa County. It includes the cost of maintaining, replacing, and/or retrofitting equipment to comply with Clean Air Standards. Components are:

- Patching and sealing paved surfaces (required especially for roads that are at lower pavement condition index levels);
- Overlay repairs;
- Vegetation management to maximize clearance and sight distances and provide for fire safety;
- Cleaning and stabilizing roadside drainage systems;
- Replacing and improving regulatory and warning signs;
- Painting pavement stripes and markings;
- Minor safety improvements;
- Road lights and traffic signal maintenance;
- Providing road closures for emergencies;
- Cleaning up spills;
- Storm damage (non-declared emergencies);
- Providing utility services for intersection lighting and signals;
- Coordinating special events such as marathons and bike races;
- Issuing encroachment and oversize permits;
- Litter removal;
- Sanding for ice conditions and infrequent snow removal;
- Rule 20A Utility Underground Program; and
- Rights of Way purchases

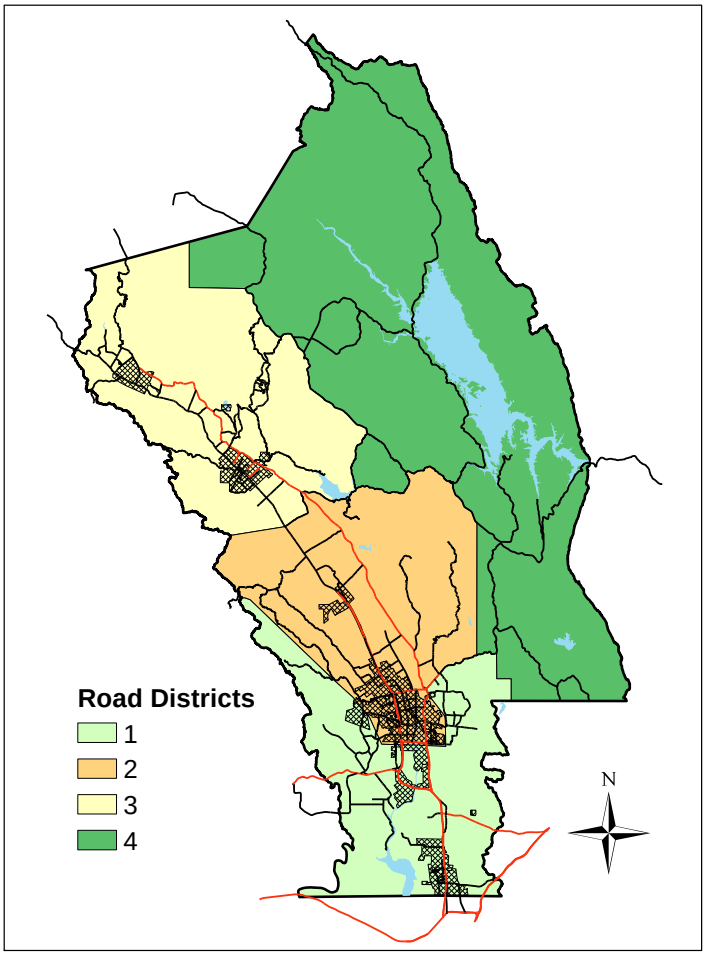
The first four bullets listed above account for 62% of the work program activities.

These maintenance activities have a direct relationship with health, safety and liability concerns. The Department believes that these services must not be allowed to fall below the present minimum level of service. As a result, the majority of discretionary revenues within the Roads budget is allocated to maintenance.

The Fiscal Year 2007-08 budget includes $4.3 million in appropriations, of which $2.7 million is for salaries and benefits for 34 allocated positions.

The Roads Division is divided into four crews that provide service to assigned regions within the County. Those geographic districts are summarized in the table and map below:

District 1	Unincorporated areas north, east and west of American Canyon at Hwy 80/29 bounded southerly by Solano County/American Canyon and westerly by Sonoma County/American Canyon, southerly to Trancas/Redwood/Hwy 121/Dry Creek, which includes Coombsville, Avenues, Redwood, Mt. Veeder and Milton Roads.
District 2	Unincorporated areas of West Pueblo subdivision and roads north, east and west of Trancas/Hwy 121, which includes Atlas Peak/Silverado Country Club northerly to Hwy 128/Silverado Trail and westerly to Sonoma County line which includes Dry Creek, Oakville and Wall Roads.
District 3	Unincorporated areas north, east and west of Hwy 128/29/Chiles Pope Valley/Pope Valley to Sonoma/ Lake County lines which includes St. Helena, Calistoga, Deer Park and Angwin.
District 4	Unincorporated areas north, east and west of Hwy 121/128 at and including Wooden Valley and Wragg Canyon Roads northerly to Lake County line and westerly to and including Chiles Pope Valley/ Pope Valley and Butts Canyon along with James Creek/Aetna Springs and Oat Hill Mine Roads.



Program Components:

Capital Improvement Projects:
Surface Treatment Program

The Surface Treatment Program provides various surface treatment applications to existing pavement that has deteriorated due to age, wear and tear, or damage. The four most common treatments are asphalt overlay, chip seal, slurry seal and cape seal treatments. All four treatments share the same objective of restoring or protecting the surface characteristics of the road infrastructure thereby extending the useful life. The following are working definitions for these treatments:

Asphalt Overlay: One or more courses of new asphalt paving is placed on top of an existing pavement; generally includes an asphalt leveling course to correct the contour of the old pavement.

Chip Seal: A surface treatment in which the pavement is sprayed with asphalt (generally emulsified) and then immediately covered with aggregate and rolled. Chip seals are used primarily to seal the surface of a pavement with non load-associated cracks and to improve surface friction, although they also are commonly used as a wearing course on low volume roads.

Slurry Seal: A mixture of slow-setting emulsified asphalt, well graded fine aggregate, mineral filler, and water. It is used to fill cracks and seal areas of old pavements, to restore a uniform surface texture, to seal the surface to prevent moisture and air intrusion into the pavement, and to improve skid resistance. This treatment does not add strength, and can only be used on surfaces that have not shown evidence of failure.

Cape Seal: Cape seal consists of a chip seal covered by a slurry seal or a microsurface. The Cape seal, if constructed properly, provides a smooth, dense surface, one having good skid resistance and a relatively long service life. Cape seal, in addition, provides a durable and impervious surface. The rich slurry mix over the chip seal eliminates the problem of loose aggregate, holds stones of the seal coat firmly in place, and reduces traffic noise.

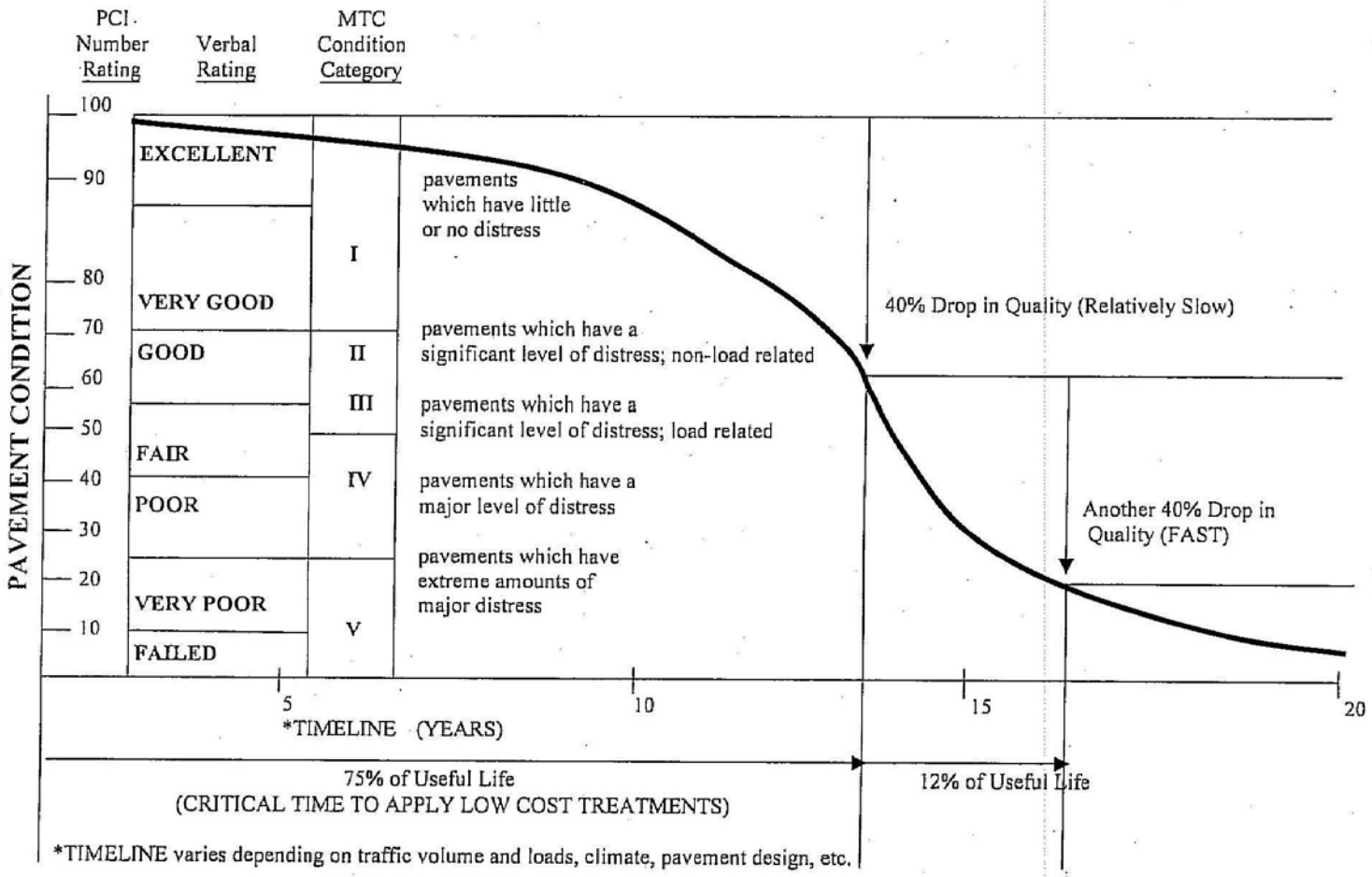
To be most cost-effective, surface treatments should be applied while the Pavement Condition Index (PCI) is classified in a numeric rating index between 60 and 70 (with 100 representing a new road and 0 representing a failed road). It is estimated that the cost of surface treatment applications can increase as much as 4 to 5 times the original cost when these applications are completed after the rating index falls below 60.

Typically, surface treatment applications are provided by contracted services, with the specific treatment type depending upon one or more of the following variables:

- Road classification (i.e. arterial, collector, local);
- Type and amount of traffic load (e.g. automobiles, trucks);
- Climate and weather conditions;
- Present pavement condition;
- Availability of funding

The diagram that follows provides a visual illustration of the pavement life cycle with respect to expected life, optimal/critical periods to apply surface treatments, and the anticipated deterioration pattern of roadways. Notably, the curve representing the life cycle of road infrastructure is not linear, but rather is curvilinear where the rate of deterioration rapidly increases when pavement quality falls below a pavement condition index of 60.

PAVEMENT LIFE CYCLE



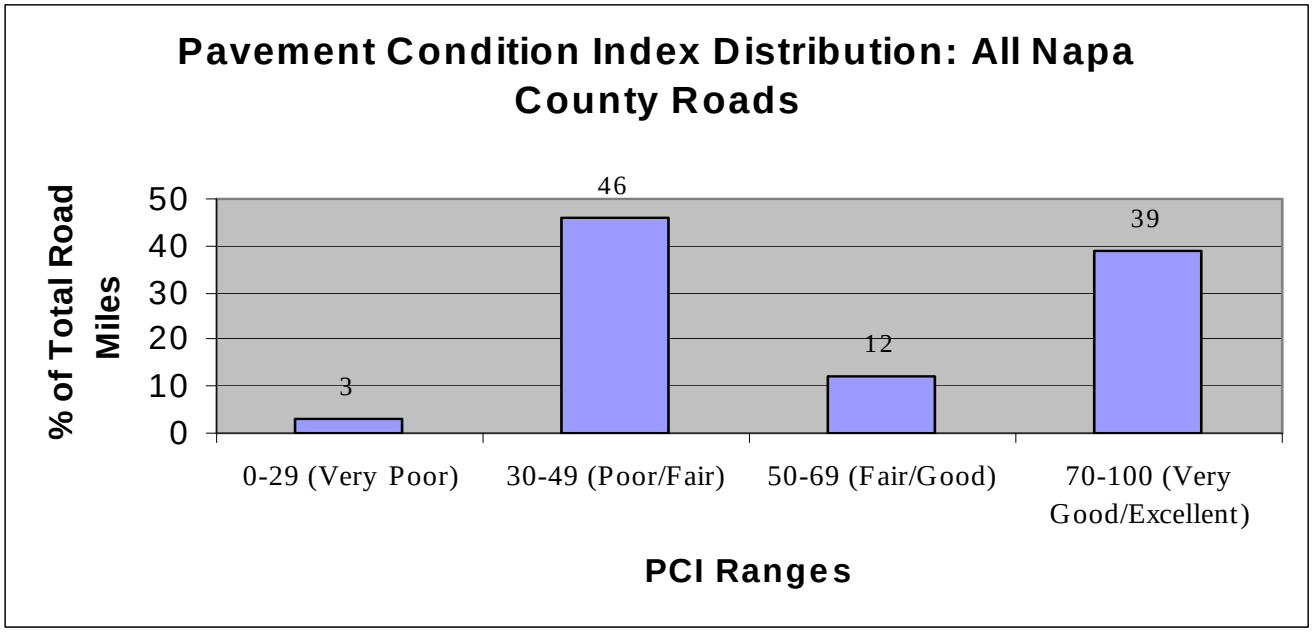
At the end of calendar year 2004, the Department provided to the MTC a report on the pavement conditions of county roads. Based upon this report, the MTC ranked Napa County as having one of the worst pavement conditions for the jurisdictions within the MTC. The report also included Marin and Sonoma counties within this worst-pavement category.

The report determined that the average pavement condition index (PCI) for Napa County was "53" for 435 miles of paved roads. Two additional miles of paved roads have been added since this report, and the remaining nine miles of County roads are dirt roads and are not included in this analysis.

All County Roads

A more detailed analysis of all County Roads provided the following distribution by PCI rating:

PCI Range	PCI Distribution of All Napa County Roads
0-29	3% (13 miles)
30-49	46% (202 miles)
50-69	12% (51 miles)
70-100	39% (169 miles)



The importance of this data is that 215 county road miles (49%) were already in a poor/very poor condition where the cost of surface treatment applications could be as much as 4 to 5 times the original cost had this surface treatment been provided at an earlier time. The 51 miles of road that were in the Fair/Good category in 2004 (12%) should be programmed for a surface treatment application to provide the most cost-effective use of revenue to protect the County's investment in its road infrastructure.

Arterial/Collector Roads

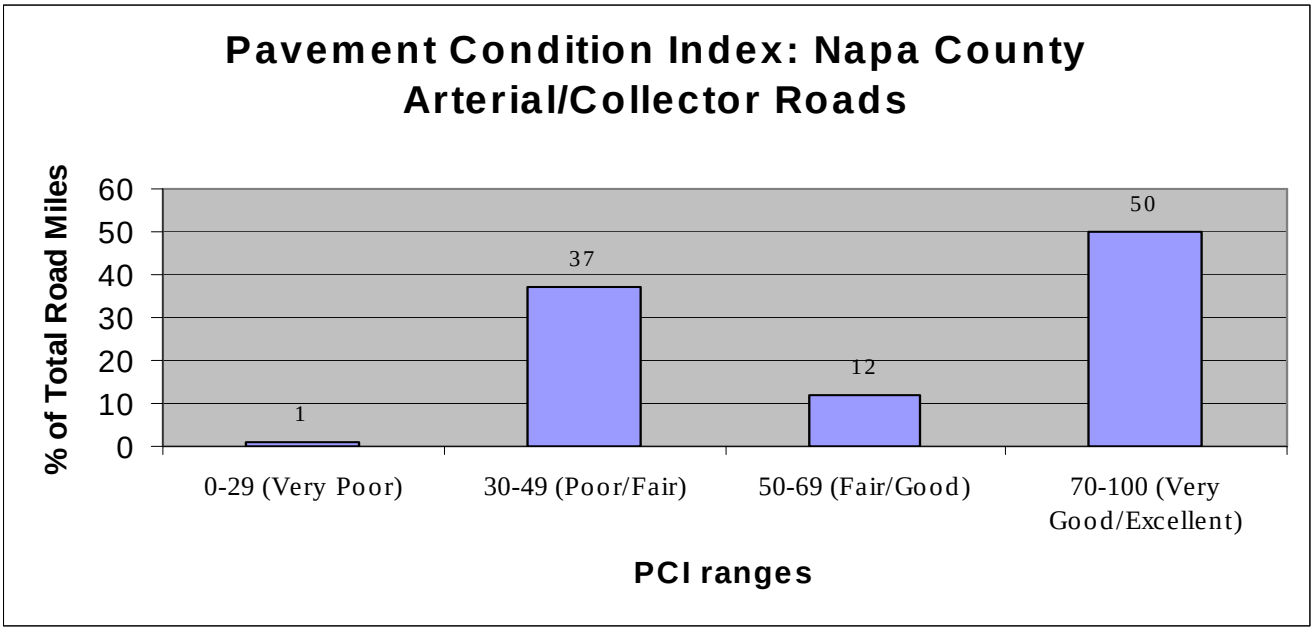
For clarification purposes, definitions of arterial and collector roads as stated in the Napa County Adopted Road & Street Standards are provided again:

Arterial: Connects collectors to highways and other major arterials; Functions primarily to carry traffic with an estimated volume of at least 5,000 vehicles per day; May be two or more lanes, with or without median strips and controlled access. (e.g., Silverado Trail)

Collector: Generally collects traffic from lesser roads and also serves as access to adjacent land; Daily traffic volume ranges from 1,000 to 5,000 vehicles (e.g., Petrified Forest Road)

The MTC analysis specifically addressed the PCI distribution for the arterial/collector roads.

PCI Range	PCI Distribution of Napa County Arterial/Collector Road
0-29	1% (2 miles)
30-49	37% (63 miles)
50-69	12% (21 miles)
70-100	50% (83 miles)



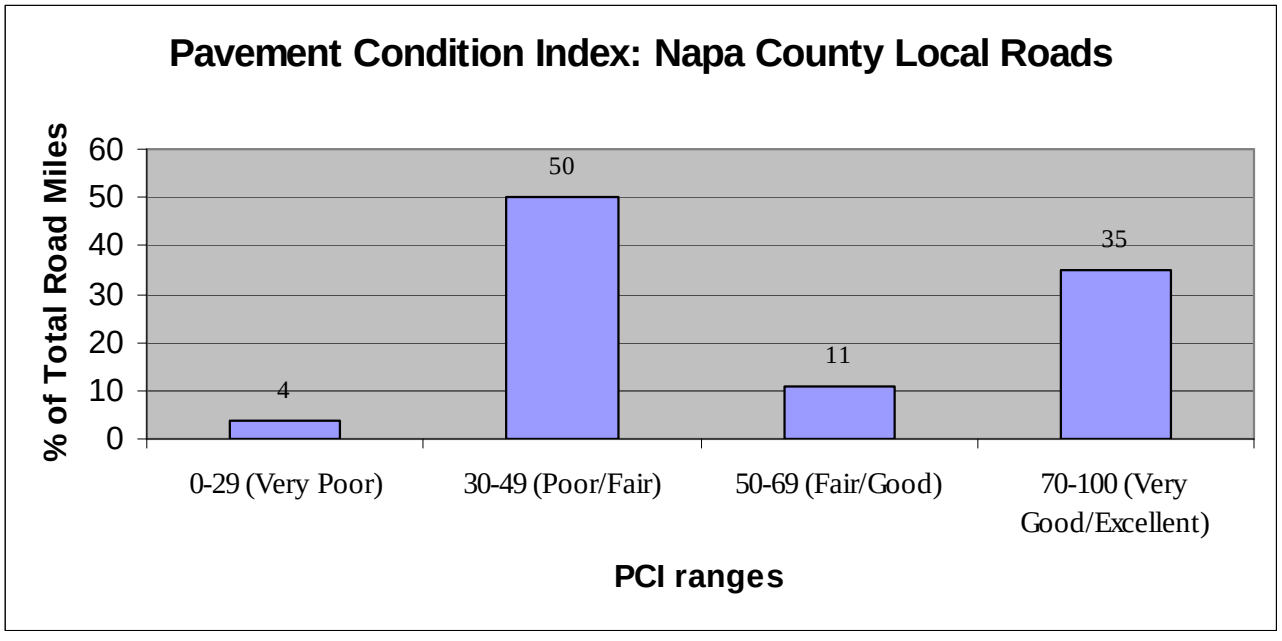
This PCI distribution indicates that 38% of Napa County Arterial/Collector roads are already beyond the optimal/critical time to apply lower cost surface treatments, while 12% are at the critical point where most cost-effective surface treatment application should be applied.

Examples of Arterial/Collector road segments beyond the optimal/critical time to apply surface treatment applications include Pope Canyon and Petrified Forest, and a few segments of Silverado and Deer Park. Examples of Arterial/Collector road segments where it is most cost effective to apply a surface treatment application include Chiles Pope Valley from Lower Chiles to Howell Mountain, Old Sonoma and Big Ranch, Atlas Peak from Highway 121 to Hardman Avenue, Berryessa Knoxville from State Route 128 to Pope Canyon, and Zinfandel Lane.

Local Roads

The MTC analysis also specifically addressed the PCI distribution for local roads.

PCI Range	PCI Distribution of All Napa County Local Roads
0-29	4% (11 miles)
30-49	50% (132 miles)
50-69	11% (30 miles)
70-100	35% (93 miles)



Examples of Local road segments beyond the optimal/critical time to apply surface treatment applications include Lovall Valley, Diamond Mountain, Circle Oaks, Heinke, and Lokoya.

The County's investment in the Surface Treatment Program has always been limited because of lack of Roads revenue. The disparity between funding and required maintenance expenditures continues to widen as traditional revenue sources fail to increase at the same rate as the cost of surface treatment methods. The American Public Works Association has analyzed the effect of inflation on road maintenance expenditures and concluded that:

> "Inflation has severely eroded the buying power of the maintenance dollar. The material, labor and equipment cost to place a ton of patching material in 1967 was $25 per ton. Today these same costs can be $115 per ton — more than four times as much. Just to stay even with inflation (let alone keep up with accelerating deterioration) … revenues would have … to quadruple. Indeed, most states and municipalities dependent on flat-rate gasoline tax revenue saw per-mile revenue decreases over much of the last two decades due to increased fuel efficiency."[2]

Similar conclusions were found by the American Public Works Congress & Exposition: "In the past 12 months the price of asphalt cement has escalated from $195 in 2005 to $390 per liquid ton in 2006".[3]

Surface treatments only have a useful life of between 12 and 15 years. If we were able to use best management practices, we would be applying an appropriate surface treatment to nearly 30 miles of road each year to remain on a 15-year cycle.

To help illustrate the magnitude of the problem:

Only 8.15 miles of surface treatment applications have been completed for the last three fiscal years (2004-2007), at a cost of $3 million.

Project	Miles
Silverado Trail from Soda Canyon to Stags Leap	3.50
Silverado Trail from Yountville Cross Road to Rector Bridge	1.00
Yountville Cross Road	1.65
Silverado Trail from Rector Bridge to Oakville Cross Road[4]	2.00

All public agencies are suffering the same order of magnitude problem with funding, although some are doing slightly better than others for reasons that are discussed in the section on benchmarking. The challenge will always be to do the best we can with the funds that are made available to us.

[2] American Public Work Association; 1998 The Hole Story page 7

[3] American Public Works Congress & Exposition, September 12, 2006 Presentation by John Calvert , Director of Tennessee Public Works Institute regarding Pavement Preservation

[4] Paving is complete; Striping/shoulder work to be completed in Fiscal Year 2007-08

Based upon current construction costs, the per-mile cost of various surface treatments varies based on the treatment selected. These costs assume two lanes, four-foot shoulders and striping, and also include typical engineering, and administration of design and contracting for overlay projects. No reconstruction, such as deep plugging failures and grinding, are included in the costs per mile listed below.

- Conventional 2 inch asphalt overlay: $232,000 per mile
- Rubberized 2 inch asphalt overlay: $295,000 per mile
- Chip seal: $106,000 per mile

As part of the work program for Fiscal Year 2007-08, the Department will update the 2004 analysis and develop a long-term Surface Treatment Program to quantify the present and future PCI for arterial, collector and local county maintained mileage, including an analysis that provides detailed program expenditures based upon goals set by the Board. This analysis will also forecast the PCI for the county maintained mileage if the County continues with the present level of service. The Department will also introduce, as part of the Fiscal Year 2008-09 budget, performance measures for the number and percentage of county maintained miles above and below benchmark PCI levels established during the 2007-08 fiscal year. These performance measures will be for all three categories of county maintained mileage: arterial, collector and local roads.

The Fiscal Year 2007-08 budget includes $1,280,000 dedicated to the Surface Treatment Program, including $848,530 in grant funding and $431,470 from the Road Fund as the required match and for preparation work. Specifically, Proposition 1B revenue is being used as the match revenue source this year as there are no other revenue sources available.

The selected projects for Fiscal Year 2007-08 are programmed due to successful applications for Federal Highway Administration (FHWA) grant revenue where the road classifications meet certain minimum standards to be eligible for rehabilitation funding. The grants require that the Road Fund provide a specified match amount, and cover any necessary preparation work before the Surface Treatment Application. The projects are:

- Wooden Valley Road Rehabilitation (6.5 miles)
  (Grant Funding - $760,000; Road Fund - $400,000)
  This project is in the bidding phase and work is anticipated to begin in August/September 2007. The asphalt overlay will be less than 2 inches and the length of the overlay may be reduced to match the budget available for the project.

- Silverado Trail Rehabilitation (2 miles)
  (Grant Funding - $88,530; Road Fund - $11,470)
  Paving was completed in FY 2006-07 at a cost of $770,000 on this 2-mile project on Silverado Trail from Rector Creek to Oakville Crossroad. Striping and shoulder work remains to be completed on this project.

- Deer Park Road Rehabilitation Design Phase (4 miles)
  (Grant Funding – 0; Road Fund- $20,000)
  Once approved, it is anticipated that grant funding will provide $1,250,000 with a Road Fund match of $172,000. This will be reflected in Fiscal Year 2008-09 budget.

Napa County has 99.9 miles of arterial and collector roads that meet Federal Highways Administration (FHWA) criteria to be eligible for this funding source.[5] However, there is not enough grant funding available to provide for timely surface treatment applications.

The majority of the County road system, including the remaining 69.1 miles of collector roads and 266 miles of local roads, is not eligible for this grant-funding source, and there has been insufficient Road Fund revenue to dedicate to this function without compromising the integrity of the maintenance program.

Other counties' road departments are faced with the same circumstances of a revenue base not keeping up with the cost to provide services. For example, the County of San Mateo Public Works Department indicated in its Fiscal Year 2006-07 mid-year performance report that "The Program relies on funding from fuel sales taxes, which is based on gallons sold without respect to sales price. As fuel prices have escalated, consumption has fallen, thus reducing the amount of tax revenue the County receives. This reduced revenue has resulted in fewer funds available for preventative road maintenance and thus declining PCI values."

[5] See Attachment One: FHWA Eligible Roads.

Program Components:

Capital Improvement Projects:
Other Road Improvements

Other Road Improvements include non-surface treatment capital improvement projects that benefit the road system. Examples would include replacement of drainage and/or roadway structures or widening of existing road surfaces to serve a variety of transportation users including cyclists and pedestrians.

The Fiscal Year 2007-08 budget includes $1,107,992 dedicated to two (2) Class II bike lanes and a bridge replacement project,. That total includes grant funding of $869,149 and Road Funds in the amount of $238,843. Specifically, Proposition 1B revenue is being used as the match revenue source.

Class II bike lanes share the right-of-way with a roadway or walkway, and are indicated by a bikeway pictograph on the pavement and a continuous stripe on the pavement or separated by a continuous or intermittent curb or other low barrier. As the Class II Bike lanes share the right-of-way, they provide some level of safety for cyclists/pedestrians.

While already stated, it is important to reiterate that these projects are programmed because of successful applications for Federal and State revenue where the road classifications meet certain minimum standards to be eligible for funding. The Road Fund also provides match revenue. Specifics of the three programmed projects are as follows:

Project Description	Grant Funding	Road Funding
Las Amigas Class II Bike Lane (3,600 feet)	$412,000	$64,355
Conn Creek Class II Bike Lane (4,760 feet)	$165,000	$136,637
Oakville Crossroads Bridge Replacement, Design Phase	$292,149	$37,851
Total	$869,149	$238,843

It is important to note that CalTrans provides a biennial safety inspection of County bridges. The Oakville Crossroads Bridge has been identified as needing to be replaced, and construction is anticipated to begin next fiscal year. It is anticipated that the total cost of this replacement will be approximately $3 million. While the Department anticipates receiving a FHWA grant, the County must provide approximately $400,000 in match funds. It is anticipated that Proposition 1B revenue will be used for this purpose.

Program Components:

Overhead/Support Services

Overhead/Support Services provides for the fair share contribution of the cost of doing business. This includes fair share contributions to County departments for their support services and for Public Works administrative costs that are incurred in the business management of the Road Fund.

The Fiscal Year 2007-08 budget includes $690,069 in the following areas:

Liability Insurance Assessed by CEO/Risk Manager, based on claims history and exposure.	$132,168
Management Information Services Assessed by CEO/ITS based on a formula that includes number of computers, approved budgetary appropriations, number of staff, as relates to ITS prior year actual expenditures	$62,389
Office of Management and Budget A87 Calculated and assessed by Auditor-Controller based on complex formula. The Cost Plan (A87) is a way for *Service* (Auditor, HR, etc) departments to allocate costs to *Operating* (Library, Assessor, etc) departments in a consistent, definable, appropriate way. This allows the setting of an overhead cost rate used when billing the federal government.	$119,037
Communications Radios, pagers, cell phones, satellite phone, landline phone and related charges.	$13,400
Office Supplies	$12,000
Building Maintenance Anything associated with the repair/maintenance of the Corporate yards, including recovery of costs associated with Property Management staff assigned those activities.	$5,000
Public Works Administrative Public Works administration costs incurred in the business management of the Road Fund.	$346,075

Program Components:

Declared Emergencies

Historically, the Road Fund has been required to pay for the cleanup and repair costs of emergencies which severely damage the County roads. While the Federal Emergency Management Agency (FEMA) and the State Office of Emergency Services (OES) provide reimbursement for many of these expenses, not all of the costs are reimbursable.

The winter storms at the end of December 2005 and in April 2006 have raised the issue as to the sustainability of the Road Fund's present revenue sources to provide for such emergencies in addition to other programmatic requirements. The Fiscal Year 2007-08 budget includes:

FEMA and OES eligible projects (10) (expense and offsetting reimbursement)	$5,260,000
Road Fund (Repayment to General Fund for end of year loan in Fiscal Year 2006-07) (expense)	$421,650

Funding Sources

Discretionary Road Fund Revenue

The Fiscal Year 2007-08 Road Fund budget estimated approximately $4.9 million in discretionary revenue from five primary sources. This revenue, in most cases, can be used for all five categories of activities funded through the Roads budget. These revenue sources are:

Gasoline Taxes	Approximately $2.8 million is returned to the County. The gasoline tax is a fixed amount per gallon sold, and only increases to the extent that additional fuel is sold. The revenue returned is based on the number of maintained miles and the number of registered vehicles.
Proposition 42	We expect about $740,000 each year. It is a return of a portion of the sales tax on gasoline and will therefore fluctuate based on the price of fuel. This revenue source can be used for CIP - Surface Treatment Program and Maintenance activities.
ISTEA Exchange and Match	$337,000 is received each year through a Federal/State program that exchanges State revenue for Federal revenue to allow the County to use this revenue source for any Road Fund purpose.
General Fund	$892,000 is contributed from revenue collected in the county for Vehicle Code Fines and the Motor Vehicle In-Lieu Tax. ($600,311 of this contribution is required as part of the proposition 42 Maintenance Of Effort requirements to prevent Proposition 42 revenue from replacing previous General Fund revenue used to support the Road Fund.)
Permits/Other Charges	$135,000 comes from encroachment permits and oversize load permits issued by the County's Planning Department.

Gasoline taxes and Proposition 42 revenue represent 72% of discretionary Road Fund revenue. It is interesting to note that the annual direct return of gas tax dollars from Gasoline Taxes and Proposition 42 (taxes "paid at the pump") amounts to only $28 per registered vehicle in the county, based upon 126,455 registered vehicles as of March 1, 2005.

The Fiscal Year 2007-08 budget also required the use of $477,000 of the Roads Fund Balance to ensure that there was sufficient projected revenue to match appropriations. Specifically, the Fund Balance monies were used to provide for the repayment of $421,650 to the County's General Fund and to provide for Maintenance activities.

Restricted Road Fund Revenue

The Fiscal Year 2007-08 Road Fund budget estimates approximately $1.8 million in restricted revenue. Typically, this revenue is available in the form of grants from State or Federal funding programs, and is restricted to capital projects only on our most heavily used roads, namely arterial and collector roads. Most of these programs require a local match in order to obtain the grant funds. This is the case for sources such as Federal Surface Transportation Program (STP) and Congestion Mitigation and Air Quality (CMAQ) grants that are administered through the MTC and the Napa County Transportation and Planning Agency (NCTPA). The total amount of funds available through these programs can vary in any given year, but will generally amount to just over $1 million annually, an amount that is insufficient to effectively fund a Surface Treatment Program.

One-Time Revenue

Funding from Proposition 1B is scheduled to begin disbursement to the County this year. It does not require a match, and can be used for limited maintenance projects as well as capital projects on any County road. It is anticipated that Proposition 1B funding will provide approximately $5 million over the next five to six years. In Fiscal Year 2007-08, the Department is using approximately $670,000 as the match for other grants funding CIP – Surface Treatment Program and CIP – Other Road Improvements. The Department will use the remaining $146,000 for Maintenance activities that focus on repairs and traffic safety.

As stated previously, the Proposition 1B revenue is not a perpetual funding source, but rather is limited, one-time revenue. Given the structural imbalance between operating revenues and expenditures, the Department has opted to use this revenue source primarily as a match for other grant-funded Surface Treatment Programs, rather than to fund Surface Treatment projects that are solely funded by the County. The alternative would have been to reduce the level of the service for maintenance programs.

The use of Proposition 1B revenue for this purpose has simply delayed the effect of the structural imbalance between revenues and expenditures.

Also in this category is $5.26 million in reimbursement funds from the Federal Emergency Management Agency (FEMA) and the State Office of Emergency Services (OES) for recovery work caused by the floods of 2005-2006.

Benchmarking

Before attempting to interpret the data provided in this analysis, it is important to note that caution and conservatism must prevail as benchmarking is not a perfect science. Remember, also, that road systems differ from one jurisdiction to another. The variables that cause these inherent differences include, but are not limited to:

- Weather;
- Type of traffic;
- Cost of living;
- Previous engineering and prior history in providing road maintenance and surface treatment programs; and
- Different accounting practices in tracking information

The data provided in this report does not intend to provide a one-to-one comparison of our program to other counties' Roads departments. However the information provides a picture of how our program fits into the range of performance of other counties.

As previously referenced, the MTC has provided a report on the pavement conditions of county roads.[6] The State Auditor also provides a Streets and Roads Annual Report with financial data; the most recent report was published for Fiscal Year 2004-05. Both reports can be used for the purpose of benchmarking with the other Bay Area counties.

[6] See Attachment Two: Bay Area Transportation State of the System 2006; pages 35-39 and pages 69-71

An analysis of the Fiscal Year 2003-04 and the Fiscal Year 2004-05 State Auditor's reports demonstrate that there is a correlation between the Pavement Condition Index (PCI) ratings and the dollars invested in maintaining the existing transportation system infrastructure. The analysis focused on the three categories essential for the maintenance and preservation of the existing infrastructure — Maintenance, CIP – Surface Treatment Program and Overhead/Support Services.

Based upon the MTC and State Road Fund Auditor reports, a listing of the average PCI and the investment per mile for fiscal years 2003-04 and 2004-05 is provided.

Jurisdiction	PCI Average[7]	Investment per Mile
Contra Costa[8]	83	$33,084
Santa Clara[8]	79	$48,015
Alameda[8]	71	$53,426
San Mateo[8]	66	$49,997
Solano	58	$17,574
Napa	53	$14,114
Marin	47	$13,412
Sonoma	44	$15,636

[7] An average PCI rating of 60 is the minimum needed to be considered to have a good pavement condition.

[8] Urban, self-help County

A number of local counties that have a higher PCI rating are also self-help counties, meaning that the voters have approved a dedicated sales tax for transportation purposes. Alameda, Contra Costa, San Mateo and Santa Clara counties have had a tax for some time. In the most cases, the majority of this funding goes for construction of new improvements, although some funding is made available for Surface Treatment and Safety projects. Those four counties are also more urban, and therefore have a higher population density, which provides for a more favorable return on gasoline tax revenue based on a formula of miles and registered vehicles.

Benchmarking data has also been obtained for the counties of San Luis Obispo, Santa Barbara and Santa Cruz. While this information is useful, it must be noted that the counties of Santa Barbara and San Luis Obispo have a lesser average rainfall than the MTC regional area. The prevention of, and response to, water penetrating into the pavement is an important element of a sound maintenance program, and therefore has an impact on the size of investment required.

Jurisdiction	PCI Average	Investment per Mile
Santa Barbara	68	$17,050
San Luis Obispo	68	$15,449
Santa Cruz	50	$28,443

Napa County's Fiscal Year 2007-08 budget has approximately $6.3 million allocated for the three program activities of Maintenance, CIP – Surface Treatment Program and Overhead/Support Services. This funding level equates to an investment of $14,135 per mile, close to the average investment level for fiscal years 2003-04 and 2004-05.

Where Do We Go From Here?

Additional analysis is necessary to address potential solutions. There are basically three areas that should be reviewed:

- Program Efficiencies
- Program Reductions
- Increased Revenue

Program Efficiencies

Program efficiencies will not solve the structural imbalance. However, the Department is challenging staff on ways to maximize our services.

For example:

1. The Department has begun to replace outdated equipment, through depreciation collected, with modern, efficient equipment. The emphasis on quality rather than quantity has led to a marked decrease in the number of pieces of equipment purchased. A recent example: The Department purchased a Vactor Truck for culvert cleaning. Previously, cleaning a culvert involved a half-day of work for a three-member road crew and a water truck. That same task can be completed with the Vactor Truck, in the same amount of time, with a two- member road crew.

2. We have improved the paving and patching process through employee training, upgraded equipment and an expectation of consistent, high-quality workmanship. We have retooled the patching operation, and the resultant patches are much more durable, greatly decreasing the need to continually patch the same holes. We have also started using aggregate base grindings provided at no cost by various sources, including the cities and private operators, rather than purchasing aggregate base material. Continuing this practice will save $45,000 in the material account.

3. Where possible, the Department will recommend chip and cape seal applications for certain road segments instead of the traditional overlay program, due to recent technology improvements and advancements. This alternative will allow the Department to address a larger quantity of surface treatment needs (more miles) given that chip seal applications are approximately 36% - 46% of the cost of traditional overlay treatments.

The Department will continue to examine additional cost-effective strategies for all its applications.

Program Reductions

There is anecdotal evidence that other jurisdictions have instituted programs of disinvestment where certain local roads are allowed to return to gravel when there is insufficient revenue to provide timely surface treatment applications, and the condition of the road is poor. We are in the process of ascertaining whether this is correct, and if so, the long-term effect and impact of this program.

Certain services provided by road crews are not directly related to maintenance of the existing roadway infrastructure or for traffic safety. They are provided because they provide the community benefits such as public health, fire safety, aesthetics or alternative transportation. If service cuts are to occur, these peripheral services should be considered first. They include:

- Stop applying for Class II bikeway grants, because of the need for discretionary Road Fund revenue to match these grants;
- Eliminate the litter and dead animal removal programs;
- Eliminate participation in the Rule 20A utility undergrounding process; and
- Reduce the Vegetation Management program, except in cases where sight distance or vertical clearances would be jeopardized.

Any reductions in service would potentially increase the County's risk exposure, which must be part of this discussion.

Increased Revenue

✔ A number of local counties that have a better PCI rating are also self-help counties, meaning that voters have approved a dedicated sales tax for transportation purposes, including Alameda, Contra Costa, San Mateo and Santa Clara counties. In most cases, the majority of this funding goes for construction of new improvements, although some funding is made available for Surface Treatment and Safety projects.

Although Measure H failed in Napa County in 2006, there may be another opportunity to bring a transportation sales tax to the voters for their consideration. It is important to make clear that a transportation sales tax provides income from tourists who visit our Valley, thereby matching the funding source to the population segment that causes a significant degree of the wear and tear on County roads.

✔ Given that 72% of the Road Fund's discretionary revenue comes from gas taxes at an average of $28 per registered vehicle, the County may elect to join other jurisdictions in seeking legislative action by the State to index the gasoline tax to an annual inflation indicator.

✔ One option available to the community is to form County Service Districts, and provide assessments to ensure that local roads receive surface treatment applications.

✔ The Department will continue to pursue grants that are focused on essential activities/priorities and mandated programs. An example of such efforts is the $503,234 grant received from the California Air Resources Board (ARB) to help public agencies replace or retrofit their in-use off-road diesel vehicles to reduce emissions and to be in compliance ARB mandated regulations. Only $25 million dollars in grant funds were made available on a statewide basis, and the County received 2% of that amount. The successful award of this grant allows $500,000 to be available for other Maintenance programs.

✔ A final option that may be considered is additional General Fund contributions. While being mindful that there are many legitimate needs that the policy makers must consider and prioritize, the investment of maintaining the existing road infrastructure is an important strategic decision that should be considered in connection with other county priorities.

Future Action

The Department will return to the Board at a later date with an analysis of the following areas:

- Development of a long term Surface Treatment Program to quantify expenditures required and the projected PCI for county roads based upon goals set by the Board. This analysis will also forecast the PCI for the county maintained mileage if the County continues with the present level of service.
- Update to the 2004 MTC analysis regarding other unfunded maintenance needs
- Alternatives analysis regarding potential options to solve structural imbalance between operating revenues and expenditures.

No action is requested from the Board of Supervisors at this time.

Attachments