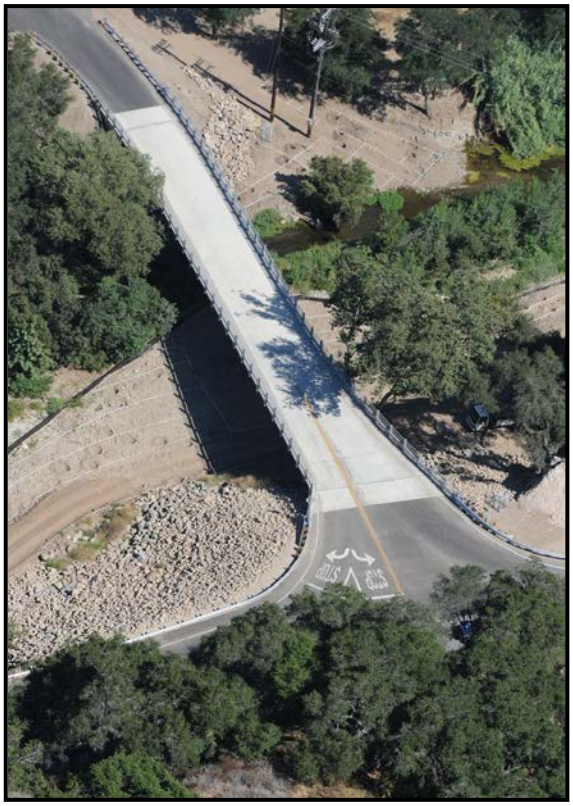
Public Works Agency Transportation Department Strategic Master Plan Revision No. 1

Prepared for the County of Ventura, California

November 13, 2012








Nichols Consulting Engineers

501 Canal Boulevard, Suite I • Point Richmond, CA 94804 •
510.215.3620 • FAX 510.215.2898

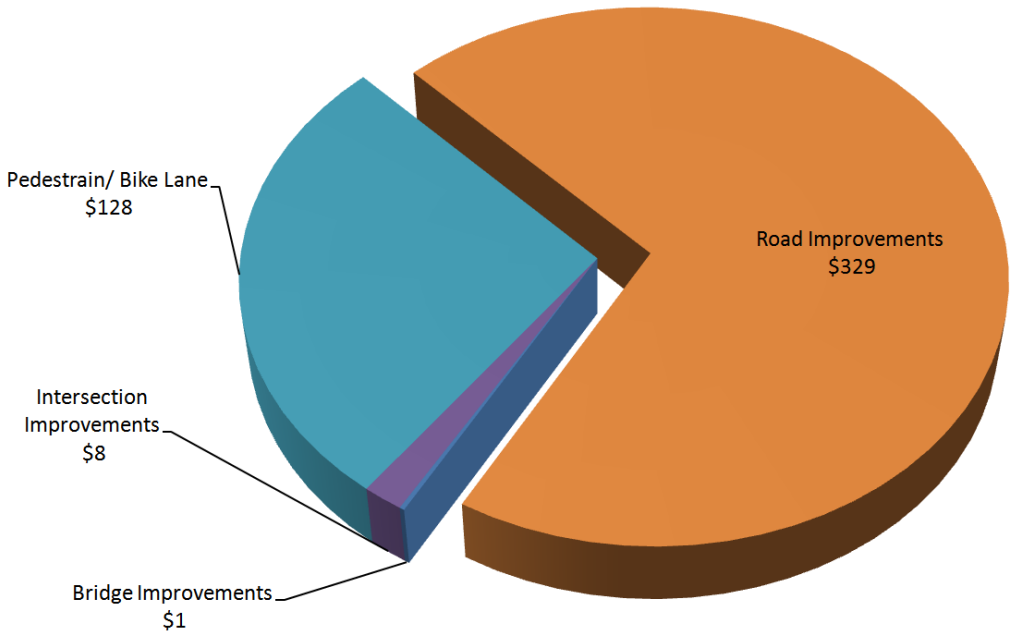
NCE #A638.01.30

Table of Contents

Executive Summary

The primary objectives of the Strategic Master Plan were to identify and prioritize all capital improvement projects in Ventura County's Public Works Agency Transportation Department (PWATD) that improve existing levels of service. The proposed projects were determined by reviewing nine major data sources, such as the Ventura County General Plan and Congestion Management Program. A wide variety of projects were reviewed, ranging from roadway widening and bridge widening to construction of bike lanes.

A total of 113 projects were identified, with a total construction value of $466 million (2011/12 dollars). The majority (over 70 percent) were roadway-related projects (see figure below).



In addition, an estimate was provided for future planning studies to fill in the gaps in pedestrian and roadway facility improvements.

Finally, new prioritization criteria were developed in four categories: user benefits (as measured by traffic volume for road projects, or connectivity to schools, transit centers, etc. in the case of bike projects); source of projects (e.g., if the project was in a published County document such as the General Plan, it had a higher priority), Safety (e.g., project improvements expectation to reduce collisions, based on FHWA Safety Report) and finally, community support. However, since most of the projects have not had any public hearings nor been presented in detail to the community at large, community support will be evaluated only for the top 10 projects.

Chapter 1. Introduction

1.1 Background

The County of Ventura is located on the central coast of California, with approximately 1,845 square miles of land area, and a population of over 820,000 people. There are 10 incorporated cities: Camarillo, Fillmore, Moorpark, Ojai, Oxnard, Port Hueneme, Santa Paula, Simi Valley, Thousand Oaks and Ventura. Most of the population resides in the southern portion of the County, with the major population centers on the Oxnard Plain and in the Simi and Conejo Valleys. The population has grown more than six percent over the past 10 years and is projected to increase to nearly one million by the year 2040[1]. The vehicle miles travelled (or VMT, which is a measure of demand for the transportation infrastructure) has also steadily increased at a rate higher than the region's population growth[2]. These projected increases in transportation demand make it essential for the County to update its existing infrastructure to a level that can support the growing transportation demands of the community and stimulate local economic growth.

To meet these growing transportation needs, the County of Ventura has identified various capital improvement projects for upcoming years. This report forms the PWATD ***Strategic Master Plan (SMP) for all known improvement projects*** to meet existing and future transportation goals and make essential improvements to the transportation infrastructure.

This SMP reviews the County's identified capital projects and data for all transportation assets, and identifies assets that have little or no information available. This includes the prioritization of existing improvement projects identified in various County published sources, such as the Congestion Management Program, General Plan, and Transportation Impact Mitigation Fee Report. These documents and sources were reviewed and analyzed and areas that needed further studies were also determined. Appendix A contains a list of all sources used for this study.

[1] Ventura County 2040 Population forecast (2008), http://www.ventura.org/rma/ planning/pdf/ demograghics/2040_revised_Decapolis%205_23_08_Final.pdf, Accessed on 09/27/2011.
[2] VMT Reduction Executive Summary Report (1995), http://www.ventura.org/rma/planning /pdf/ studies/vmt_reduction.pdf, Accessed on 09/28/2011.

Description of Transportation Assets

Modern road transportation systems are comprised of many physical components, or assets, that are essential in providing safe, efficient, and cost-effective movement of people and goods. Apart from roadway pavements and bridges, there are other asset groups that play important roles in ensuring the structural integrity and efficiency of the transportation system. These additional assets include items such as signs, signals, lighting, median barriers, guardrails, crash attenuators, pavement markings, sidewalks, roadside delineators, drainage inlets, catch basins, culverts and drainage ditches, retaining walls, fencing, etc. These assets contribute to a major share of the PWATD asset value as seen in Table 1.

Table 1 provides an overview of the many transportation assets maintained by the PWATD. The data were gathered from various data sources (a list is included in Appendix A.) Overall, the County owns and maintains a road network of approximately 544 centerline miles, of which 326 miles are local roads and 218 miles are on-system roads. The network is spread across the unincorporated territories of the County as far west as the community of La Conchita, as far north as Lockwood Valley, east to several roads in the Malibu mountain areas and roads in the Santa Susana mountains, and several hundred miles of roadway in between.

Of the 544 centerline miles in the road network, approximately 58 percent of the paved roads fall in the rural areas and the remaining 42 percent are in the urban areas. There are approximately 765 miles of pavement shoulders and close to 45 miles of Class II and Class III bikeways.

Other major assets owned and maintained by the County include culverts (totaling approximately 20 miles[6]), catch basins, and drainage inlets (approximately 2,500 in number). The storm-drain data included in Table 1 corresponds to the mileage of storm drains and laterals in the pavement network. Other assets include 158 bridges, approximately 1,205 curb or ADA (American Disabilities Act) ramps and 37 traffic signals. There are also additional assets like guardrails, retaining walls, etc. that are linked to the transportation system for which the inventory data are incomplete. The assumptions used to determine the approximate value of assets owned by the County is described in Appendix C.

Note that all miles in Table 1 are centerline miles.

Table 1. Overview of Assets Maintained by Ventura County's Public Works Agency Transportation Department

Asset Type	Approximate Quantities	Unit	Approximate Value
Roadway[3]	544	Miles	$ 850 M[4]
Curb and gutter[5]	380	Miles	$ 90 M
Sidewalk[5]	160	Miles	$ 33.8M
Shoulder (Unpaved)[5]	696	Miles	$ 12.8 M
Shoulder (Paved)[5]	70	Miles	$ 143 M[4]
Storm Drain[6]	60	Miles	$ 42 M
ADA Ramps[5]	1210	Nos.	$ 3 M
Traffic Signals[5]	37	Nos.	$ 9 M[4]
Bridges[5,7]	158	Nos.	$ 477 M[4]
Bike Path[8]	45	Miles	$ 0.36M
Catch Basins and Drainage Inlets[9]	2500	Number	$ 4.3 M
Culverts[10]	104,000	Feet	$ 18.2 M
		TOTAL	**$ 1683.5 M**

1.2 Objectives of Strategic Master Plan

The primary objective of this plan is to review and analyze a comprehensive list of all authoritative documents that direct or recommend County road network infrastructure improvements and identify improvements to maintain or improve adequate Levels of Service and quality of life for the traveling public throughout the County. Through this analysis the plan will provide:

- Prioritization of existing improvement projects identified through all of the authoritative published sources, as discussed in Chapter 3.
- Analysis of existing infrastructure to determine areas in need of further study, as discussed in Chapter 4.

[3] Ventura County Road Management Program
[4] Strategic Infrastructure Assessment Plan for Transportation Department, County of Ventura PWA-Transportation Department (2011)
[5] Updated data provided by County
[6] Consultant data- preliminary estimate, Transportation_ROW_stormdrain_Estimate_Length_2011.pdf
[7] Ventura County Bridge Inspections, Project No. 50462 (2011)
[8] Bicycle Master Plan (2007)
[9] Data provided by County, VC_Inventory Transp-Infrastructure-Rev4
[10] Data provided by County, Culverts_Calculation_Of_Pipe.xls

A second objective is to identify other improvements of potential interest to the community and Board of Supervisors. These improvements will be gleaned from a review of available asset information, internal studies, and reports. Finally, the document also provides recommendations for identifying potential needs through future studies and other information. This is discussed in Chapter 4.

1.3 Report Organization

The report is divided into five sections. Chapter 1 is a brief overview of the County's transportation assets and discusses the objectives of this study. Chapter 2 discusses the data collection efforts and details the data sources used to identify capital projects. Chapter 3 describes the proposed prioritization criteria. Chapter 4 identifies asset categories with little or no data and includes recommendations to obtain this information. Finally, Chapter 5 summarizes the findings, and the appendices contain supporting data.

Chapter 2. Data Collection

This Chapter summarizes the data collection efforts for this report. It includes a brief description of sources reviewed for identifying capital projects and the procedures and assumptions used during the project selection and data verification process. The list of sources reviewed is summarized in Appendix A. A list of all capital-improvement projects is included in Appendix B.

2.1. Capital-Improvement Projects

Identifying capital-improvement projects typically involves evaluating the existing transportation infrastructure and coming up with plans to satisfy regional and local mobility needs to sustain the growing community. This may come from needs-assessment studies through citizen and customer surveys, assessment of demographic trends, making informed assumptions of the community's general needs, identifying the project impact on the socio-economic growth of the community, and so on. The results are then formalized in a series of County planning documents which form the basis for implementation and construction by the PWATD.

The County of Ventura has developed infrastructure improvement plans identifying capital-improvement projects needed to support the growing transportation demand. These are documented in a variety of County documents, which are discussed in the following sections.

2.2. Data Sources

The proposed capital-improvement projects for the County were determined by reviewing nine major data sources that were identified and provided by the County. The data sources reviewed for this project include:

1. General Plan (2005)
2. Environmental Impact Report for General Plan Update(2005)
3. Congestion Management Program (2009)
4. Bicycle Master Plan (2007)
5. Traffic Impact Mitigation Fee Projects (2001/02)
6. Transportation Infrastructure In-house Assessment (2002)
7. Future Traffic Signal Priority List (2001)
8. Caltrans Bridge List (2011)
9. Ventura County Bridge Inspections Report (2011)

1. General Plan and Environmental Impact Report (2005)

The Ventura County General Plan is a comprehensive planning document that defines the long-term plans and policies for the development of the County. The Transportation/Circulation section in the General Plan identifies the specific goals, policies, and programs related to roads

and highways, transit, rail service, airports, and pipelines. The Environmental Impact Report (EIR) evaluates the potential impacts associated with the implementation of the proposed general plan. The EIR also discusses the alternatives and mitigation measures to minimize the environmental impacts, and contains a list of environmentally feasible capital projects that are consistent with the County's General Plan and which were used as a source for identifying capital projects for the region.

2. Congestion Management Program (2009)

The Congestion Management Program (CMP), implemented by the Ventura County Transportation Commission (VCTC), includes procedures and tools necessary to manage and decrease traffic congestion in the County. The projects, programs, and strategies identified in the document are aimed at maintaining the road and transit infrastructure, relieving congestion, and reducing vehicle miles travelled. The CMP includes a Capital Improvement Program (CIP) that includes all capital-improvement projects proposed for funding in Ventura County for the next seven years (2009-2015). Projects included in CMP and CIP were reviewed to identify capital projects for the County.

3. Bicycle Master Plan (2007)

The Bicycle Master Plan (BMP), prepared by the Ventura County Transportation Commission, provides the summary and vision for bicycle transportation and recreation in Ventura County. The BMP makes recommendations to enhance and expand the existing bikeway network, close gaps, address constrained areas, provide for greater local and regional connectivity, and encourage more residents to bicycle.

This plan provides for an updated countywide system of bike paths, bike lanes, and bike routes. The plan also identifies support facilities like bicycle parking and recommends a variety of programs and policies to allow for safe, efficient, and convenient bicycle travel within and between the communities of Ventura County. The BMP includes a comprehensive list of the proposed bikeways network which is intended to provide greater access throughout the County by improving inter-city connectivity and ensuring route continuity across jurisdictions. The list of projects identified in the Bicycle Master Plan was also used to identify Capital Improvement Projects for this report.

4. Traffic Impact Mitigation Fee (TIMF) Projects (2001/02)

This document provides technical analysis for the proposed update to the County's Traffic Impact Mitigation Fee Ordinance and proposed reciprocal agreements between the cities of Ventura County and the County. The TIMF also identifies a list of capital improvements to the County road network, State highways, and intersections that are needed to restore the road segments or intersections to an acceptable Level of Service (LOS) in the unincorporated areas of the County. The document also contains cost estimates for these proposed projects.

5. Transportation Infrastructure In-house Assessment (2002)

PWATD conducted an assessment in 2002 which included a comprehensive list of capital projects for the County. This document also includes the cost estimates and a prioritization details for individual projects. The prioritization numbers were developed based on priority number equations developed by the Transportation Department Advanced Planning section. These projects were also used as a source for identifying capital-improvement projects for the County.

6. Future Traffic Signal Priority List (2001)

The future traffic signal priority list describes the methodology developed by the PWATD to prioritize installation of traffic signals. This involves collecting pertinent traffic data for intersections and assigning points to each location to identify and prioritize signal installations based on the new methodology. The document also contains a priority list for traffic signals improvements needed for the County which was used for project identification during the review.

7. Caltrans Local Agency Bridge List (2011)

The Caltrans local agency bridge list is a comprehensive list of local bridges in the state of California. The bridge list includes data related to the physical attributes of the bridges, structural type, traffic data, structural condition, sufficiency rating, etc. For review purposes, the local bridge list was used as reference to identify the structural condition of the bridges in the region. The assumptions used to prepare cost estimates for bridge projects are detailed in Appendix C (Table C-2).

8. Ventura County Bridge Inspection Report (2011)

PWATD recently commissioned a study by Atkins to review, evaluate, and document the conditions of 78 County bridges that were not included in the Caltrans Bridge List. These bridges have spans less than 20 feet and are not inspected by Caltrans. They consist of reinforced concrete girder bridges, reinforced concrete box culverts, and one steel arch culvert. The study also included cost estimates for repair and replacement as well as a priority listing, all of which are included in Appendix B. The report was to identify capital-improvement projects involving replacement of local bridges in the County.

2.3 Project List and Data Verification

The first step was to review the available data sources and prepare a comprehensive list of Capital Projects that the County intends to implement in upcoming years. A preliminary master project list[11] created by the County's Transportation Department in 2011 was used as a basis for starting this process, and projects identified during the review were added to create an updated master project list. The review included vision statements, goals, and objectives of the nine published documents as previously identified.

[11] Excel spreadsheet summarizing capital projects identified by County, Listing_of_Projects_Rev-17.xls

Project Identification Criteria

Specific criteria were used to identify and include capital projects. They included:

1. All capital-improvement projects need to be located within the jurisdiction of the unincorporated County to be eligible for inclusion in the updated master project list.

2. The bridge repair and reconstruction list was prepared based on sufficiency ratings provided in the Caltrans local area bridge list for Ventura County. Bridges that are structurally deficient or functionally obsolete with a sufficiency rating of less than 50 were included in the capital project list. This also meets the eligibility criteria for federal bridge replacement funds. For bridges not included in Caltrans bridge list, the recommendations in the Ventura County Bridge Inspection Report were used to identify capital projects involving local bridge replacements.

Project Details

Capital projects identified for infrastructure improvement included road and intersection improvements, drainage improvements, bridge widening, and construction of new bike lanes. Approximately $466 million of improvements have been identified (see Figure 1 – these are in 2011/12 dollars). A comprehensive list of all capital projects is included in Appendix B.

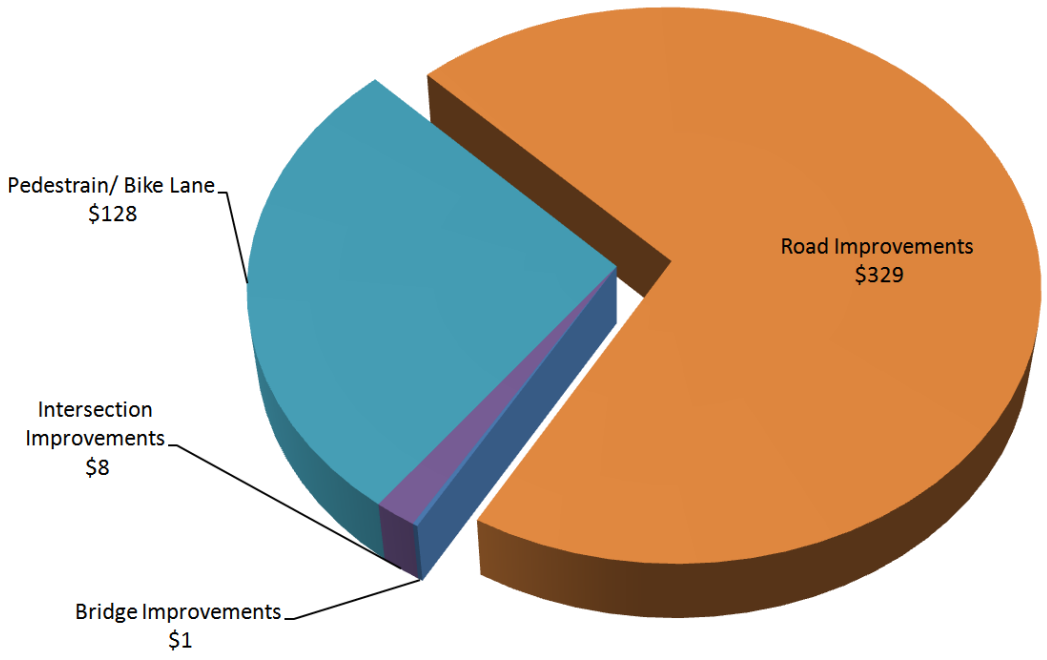


Figure 1. Cost Summary of Proposed Capital Projects for Ventura County Transportation Department

Data Verification

The proposed projects identified from each data source were combined to create a single project list and duplicate entries were removed. Projects listed in multiple data sources were credited to the principal document. The final list was then compared against the preliminary master project list prepared by the County to remove duplicate entries. To further ensure the quality of the collected data and to avoid the possibility of including projects that had been constructed or removed, the project review data was closely inspected by County staff for accuracy, status, and jurisdiction verification.

Project Cost and Escalation Factors

Cost estimates provided in the original reference document identifying the capital project were used to determine project costs. An escalation factor was then used to account for changes in construction costs between 2011 and the year of project identification.

The Consumer Price Index[12] (published by the U.S Bureau of Labor Statistics) showed an annual increase of 2.1 percent over the last 10 years. However, Caltrans' asphalt price index shows an average annual increase of 7.1 percent for paving costs in the past 10 years. Therefore, 7.1 percent was used as the escalator for all roadway or paving projects, and 2.1 percent used for all non-roadway projects.

2.4 Additional Transportation Assets

The asset inventory data available from the County is limited to the major elements listed in Table 1. There is limited or no information available on other transportation assets, such as retaining walls, traffic signs, pavement markings, guardrails, reflectors, fencing, etc.

However, in the case of traffic signs, the PWATD is in the process of creating a sign inventory database in accordance with MUTCD requirements. To date, approximately 6,000 of approximately 8,000 sign records have been entered. This database will be used to store information about traffic signs installed on County-maintained roads. The database will also be used to track the age of each sign to help determine when replacement may be required.

Inventory information on the remaining assets will need to be included for a comprehensive transportation inventory database for maintenance and operation purposes and should be used to update the value of the existing road network infrastructure owned by the County.

This is further discussed in Chapter 4.

[12] Consumer Price Index Detailed Report (August 2011). http://www.bls.gov/cpi/cpid1108. pdf, Accessed on 09/30/2011.

2.5 Maintenance Needs

Although the scope of this study was focused on existing capital projects, it is also important to note that the on-going annual maintenance of the PWATD assets is also a critical component of the total budget. In particular, pavements form the majority of the infrastructure system, and their annual maintenance costs are not inconsequential.

Chapter 3. Prioritization Criteria

3.1 Goals

As described in Chapter 2, a list of 113 projects was captured from existing master plans and studies (see Appendix B). They included a wide variety of projects, ranging from roadway widenings and improvements to bridge rehabilitation and replacements to bikeway and drainage improvements. Together, they total $466 million (in 2011/12 dollars) in design and construction costs.

As part of the PWATD's Strategic Master Plan, these projects need to be prioritized so that appropriate decisions may be made to determine funding priorities. This chapter summarizes the various prioritization criteria that were reviewed and proposed.

3.2 Review of Current Prioritization Criteria

An initial review of internal prioritization criteria developed by the County for various asset categories were first performed. Briefly, these are summarized in the following paragraphs.

Roadways

PWATD had previously developed priority equations, which included factors such as:

- Estimated Cost
- Average Daily Traffic
- Length in miles or length of detour in miles
- Traffic Safety Factor (based on fatal accidents, injuries and property damage) in last 3 years
- Life Cycle Factor (based on type of construction, e.g., corrugated steel pipe, overlays, etc.)
- Maintenance Cost Factor = cost per mile of road based on historical maintenance cost

However, one weakness in this equation was that the cost of a project overwhelmed all other factors, so that a high-cost project resulted in a low priority ranking, regardless of its desirability or benefits.

Traffic Signals

The traffic signal priority system used in the County includes the following factors:

- Traffic volume
- Warrants

- Collisions
- Pedestrian/bike facility
- Proximity to schools
- Speed limits
- Sight distance

A maximum score of 200 indicates a high priority.

Bikeways

The Countywide Bicycle Master Plan (BMP) uses the following factors for prioritization:

- Cost and construction feasibility given existing traffic, safety, and environmental constraints;
- Need, benefit, and public support;
- Funding cycles and opportunities; and
- Strength of the project as measured by specific funding criteria

The BMP's bike projects are all prioritized as high, medium, or low in the plan.

Pedestrian (Sidewalks and curb ramps)

There were no pedestrian projects identified in Chapter 2, and no prioritization criteria have been developed by the County. Although the County has conducted internal studies in the past to update and evaluate sidewalks, the available information is not complete and there are missing links that need to be identified. However, the County has an ordinance for maintenance and repairs which assigns the maintenance responsibility of the sidewalk to the adjacent property owners.

Another asset linked to sidewalks is curb ramps, which are required to comply with the American Disabilities Act (ADA). The County conducted an extensive review of curb ramps between 1995 and 2005 and identified and constructed over 600 curb ramps. However, since 2005, additional growth in the road network may necessitate another review to update curb ramp records. No prioritization criteria have been developed for this asset category.

Bridges

For bridges in the Caltrans bridge inventory, the sufficiency rating (SR) is the primary criterion for prioritization for repairs, in addition to the availability of Highway Bridge Program (HBP) funding from the federal government.

The SR was developed jointly by the Federal Highway Administration (FHWA) and the American Association of State and Highway Officials (AASHTO) and used by all states. It is a method of evaluating various factors to determine a bridge's sufficiency to remain in service. A SR of 100 represents an entirely sufficient bridge, while a SR of zero represents an entirely insufficient or

deficient bridge. The types of factors included in the rating include factors such as structural adequacy and safety, serviceability, and functional obsolescence and essentiality for public use.

The sufficiency rating helps determine which bridges may need repair or replacement, not which bridges could collapse. A bridge's sufficiency rating affects its eligibility for federal funding for maintenance, rehabilitation, or replacement activities. For bridges to qualify for federal replacement funds, they must have a rating of 50 or below. To qualify for federal rehabilitation funding, a bridge must have a sufficiency rating of 80 or below. All bridges in the state are periodically inspected by Caltrans and their SR determined.

For all local bridges with less than 20 feet span that are not inspected by Caltrans, the PWATD has completed a study by Atkins that also used the same guidelines as Caltrans bridge inspections to determine the sufficiency rating of each bridge. However no bridge has been identified as requiring widening to improve existing levels of service.

3.3 Developing Prioritization Criteria

From the review of the existing criteria, it was clear that cost, safety, and technical factors played a large role in previous prioritization efforts. However, this does not consider other broader factors, such as user benefits, community support, connectivity, accessibility, or regulatory compliance. The BMP comes closest to considering these factors.

After discussion with the County and an extensive review of other prioritization criteria used in other counties as well as agencies such as the Federal Highway Administration (FHWA), and other community groups (primarily bike and pedestrian related), four main categories for prioritization were proposed:

1. Benefits to users
2. Source of project
3. Safety
4. Community support

For the first category, it should be noted that safety considerations were implicitly considered in the criteria, and they are further described in the following sections. Finally, cost is explicitly not considered in the prioritization criteria.

3.3.1 Benefits to Users

Clearly, the most important criterion for a project is probably its benefit to users, whether they are drivers, bikers, pedestrians, local businesses, residents, schools, or other affected constituents. This category also implies that the projects improve safety for users which is discussed in more detail in the following sections.

Since benefits can be a subjective term, this criterion is defined differently depending on the asset category. For instance, for roadway projects, traffic volume is used as a surrogate for benefits; i.e., the larger the traffic volume, the larger the number of users affected and

therefore receive a benefit. For bikeway projects, proximity to schools or commercial centers increases benefit to users.

Two specific criteria were proposed for each asset category, which are discussed in the following paragraphs. However, the maximum number of points is still 5 (the individual scores are normalized within each asset category), so that this criterion is equally weighted with the first two.

Roadway Projects & Intersection Projects

There are two proposed components to the user benefit for roadway projects and Intersection projects. They are the level of service (LOS) and the traffic volume as measured by average daily traffic (ADT). The County requires a minimum LOS of C for local roads, and D for all others. A lower LOS for existing roadways can create erratic driving patterns and decrease the driver comfort levels which can add to traffic congestion and increase accident counts. Improving the LOS has a direct benefit of also improving safety for the end users. The lower the LOS, the higher the priority ranking.

5= LOS E/F
4= LOS D
3= LOS C
2= LOS B
1= LOS A

The second component is the traffic volume. The higher the traffic volume of the roadway, the higher the benefit to its users. The average daily traffic (ADT) is used as measure of traffic volume. ADT category was used to re-rank projects with final scores in the same range.

Note that ADT data from the Traffic Impact Mitigation Fee program (TIMF, 2001) were used to calculate the LOS for the projects. However, ADT values from the County's pavement management database was used if they were found to be higher than the projected values in the TIMF model. LOS and threshold values for roads were assigned based on Table 4.2.2 in the TIMF report. This may change over the years, as further studies are performed in our Roadway facilities.

Bikeways Projects (Class II and III)

For bikeways, the two criteria used to measure user benefits are connectivity to attractors such as schools, transit, recreation, commercial centers and also connectivity to existing or planned bike routes.

5 = Attractors within 1 mile, and >3 attractors served, and connects with existing bike route.
3 = Attractors between 1-3 miles, or 1-3 attractors served, or connects planned bike route.
1 = Attractors >3 miles, no attractors served, and does not connect to existing or planned bike route.

The second criterion is the project's priority in the County's Master Bike Plan. The priority rating used in the Master Bike Plan is based on the Federal Highway Administration (FHWA) Bicycle Compatibility Index (BCI) model, which includes safety aspects related to bicycle use while determining the compatibility level for bike routes.

5 = High priority
3 = Medium priority
1 = Low priority or not in plan

Pedestrian Projects (sidewalk)

Although there are no pedestrian projects currently identified in Appendix A, nonetheless, the following criteria have been proposed for future projects. The first criterion is connectivity to attractors, such as schools, transit, or other trip generators.

5 = Within 1/3 miles
3 = 1/3 to 2/3 miles
1= Greater than 2/3 miles

The second criterion is levels of service (LOS). A lower LOS for existing roadways can create erratic driving patterns and decrease driver comfort levels which can add to traffic congestion and increase accident counts. Improving the LOS has a direct benefit of also improving safety for the end users, including safety to pedestrians. Higher pedestrian traffic also translates to the potential of more safety issues; therefore, a higher priority ranking for high traffic-volume roads will directly improve safety for pedestrians.

5= LOS E/F
4= LOS D
3= LOS C
2= LOS B
1= LOS A

Bridge-Widening Improvements

Bridge-widening improvements use the same ranking methodology as Roadway Projects and Intersection Projects. Note that some of the projects in the SMP priority list incorporate the widening of roadway for any bridges within the project location under one project.

Combined Projects

Appendix B includes projects that are combined from more than one of the categories above. In this case, the following assumptions were made:

1. Bikeway construction was assumed to be the primary project for "drainage improvement and paved shoulder projects." Therefore, the bikeway prioritization criteria were used to score these projects.

2. Road improvement projects involving roadway alignments and/ or drainage, bridge widening, and paved shoulders were categorized as roadway projects and scored as such.

3.3.2 Source of Project

Inclusion of a project in any County-planning reports indirectly reflects the importance of a project. The hierarchy of published sources, established by the County, was therefore used as a prioritization criterion. Projects included in multiple sources were credited to the source with the higher score. The ranking system below is proposed (scored on a point system from 1 (lowest priority) to 5 (highest priority).

5 = Inclusion in County General Plan (2005) or Congestion Management Plan (2009)

3 = Inclusion in Traffic Impact Mitigation Fee Study (2001) or Bike Master Plan (2007)

1 = Inclusion in Transportation Department Internal Assessment (2002), Future Traffic Improvements (2010), SM&I Caltrans Bridge List (2011), Ventura County Bridge Inspection Report (2011), other published sources, or not in any published source.

3.3.3 Safety

Safety to the general public, motorists, pedestrians, and our existing infrastructure is a key goal of the Transportation Department. Safety criteria were created and evaluated for each project, and have also been incorporated into the SMP priority ranking of projects. The following safety-ranking criteria were used:

Category 1: Benefits of Safety Improvements

5= Project will provide safety measures to protect pedestrians, motorists, and existing infrastructure
4= Project will provide safety measures to protect pedestrians and motorists
3= Project will provide safety measures that will only protect motorists or pedestrians
2= Project will provide safety measures that will only protect existing infrastructure
1= Will provide no safety

Category rating is determined by the description/scope of the project and type of project.

Category 2: Utilizing Crash Reduction Factors, Based on FHWA 2008 Safety Program Report

5= 100 to 80 (Highest Effectiveness)
4= 79 to 60
3= 59 to 40
2= 39 to 20
1= 19 to 0 (Lowest Effectiveness)

Finally, if any road segments or intersections are identified in our annual safety reports as high-collision sites and are also identified in the SMP project list, the safety score of the project in the SMP will receive an additional point.

Countermeasures for each project involved identifying and then utilizing FWHA Safety Program tables to determine the appropriate CRF.

The final safety score is calculated based on the formula below:

Safety Priority Score = Average of Category 1 + Category 2

3.3.4 Community Support

Community support for a project is also important; if there is a lack of support, this could lead to litigation against the project, which delays it and adds to the costs. Community support is defined as support from elected officials, property/business owners, special interest groups (environmentalists, other advocacy groups), and the public. A high level of support will have a higher ranking. The ranking system below is proposed (scored on a point system from 1 (least desirable) to 5 (most desirable).

5 = Strong support from elected officials, property/business owners, and public with nominal community outreach.
3 = Moderate support from elected officials, property/business owners, and public after focused community outreach.
1 = Supported reluctantly or limited support from elected officials, property/business owners, and public. Significant community outreach is required.
0= No Support

However, since many of the projects shown in Appendix B have not had any public hearings nor been presented in detail to the community at large, it is currently not possible to determine their support. Therefore, community support will be evaluated only for the top 10 projects.

Therefore, it is recommended that this criterion be included in future planning and prioritization processes.

3.3 Prioritized Project List

Appendix B lists the prioritized project list after the above criteria were applied.

Chapter 4. Future Planning Studies

As was noted in Chapter 2, the asset inventory data available from County information was limited in some cases. There was limited or no information available for transportation assets such as pedestrian and bike-lane facility gaps, bridge-widening improvements, drainage-improvement studies, and other roadway facilities studies. Further, it was observed that the inventory of the storm-drain system appeared to be lower than statewide averages. This is discussed in the following sections.

4.1 Additional Infrastructue Assessments

Storm Drains

Based on the PWATD's current inventory list, the County owns and maintains approximately 21 miles of storm-drain system (pipelines). Assuming these storm drains to be primarily located in the urban areas, and when compared with data from other rural counties statewide (see Figure 2), the storm-drain mileage per urban mile is below average for Ventura County.

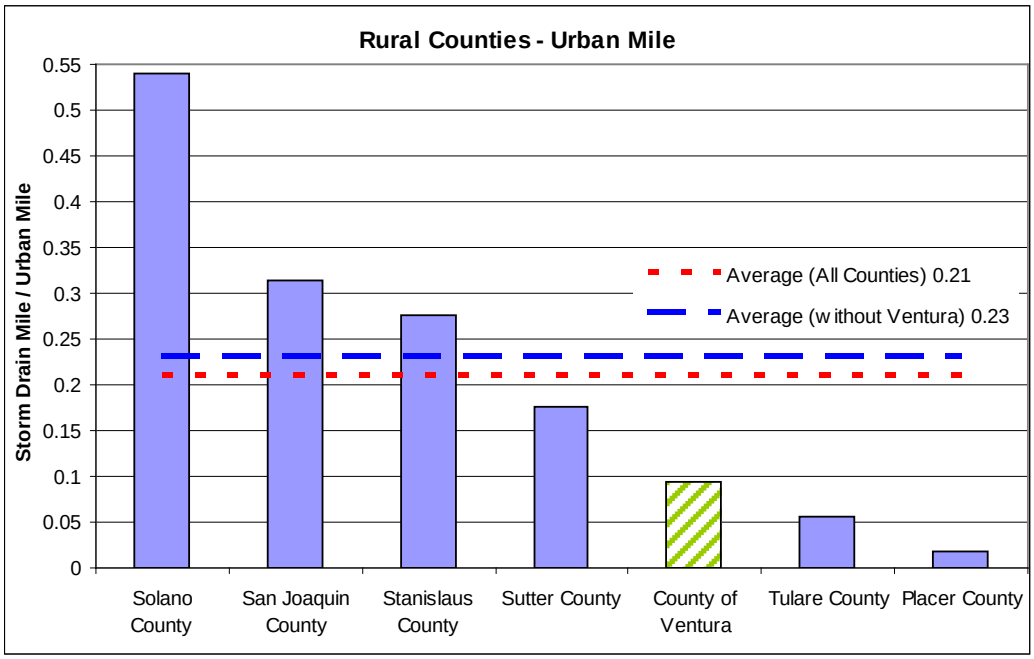


Figure 2. Storm Drain per Urban Mile for Rural Counties in California[13]

Comparisons of storm-drain mileages for all counties in the State of California (data included in Appendix C) shows a similar pattern, i.e., the data available for Ventura County appears to be lower than the statewide average, which is surprising given the level of urbanization in the County.

[13] Based on available storm drain data in California Statewide Local Streets and Roads need Assessment, 2009, Final Report. http://dpw.lacounty.gov/gmed/slsr2/reports/ 2010/final report.pdf

This observation would appear to indicate that there are significant gaps of information in the storm drain network that need to be addressed. Using the statewide average, it can be concluded that there are probably at least 60 miles of storm drains, and not just 21 miles. Assuming a replacement cost of $750,000/mile of storm drains, this is approximately $42 million of potential asset values. This figure is used in Table 1.

However, since there is no information on the age or condition of storm drains, it was not possible to determine what capital projects were required to address any potential flooding or NPDES issues, nor the required maintenance.

Therefore, a storm-drain study is recommended to develop a comprehensive and accurate geodatabase and geometric network. The results will help support the County's stormwater infrastructure planning, operations, and maintenance; inform pollutant source identification and pollutant load estimation efforts; and assist the County's Stormwater Program Coordinator with National Pollutant Discharge Elimination System (NPDES) reporting and compliance.

Bridges

A more detailed bridge-needs analysis is required in order to determine if any additional bridges need to be improved. An estimated cost to prepare preliminary engineering reports is included in Table 2.

Pedestrian Master Plan (PMP)

A Pedestrian Master Plan is also recommended. Typically, this will be part of the Land Use and Transportation Element of the County's General Plan. In many ways, it will be similar to the Bicycle Master Plan, and is intended to promote pedestrian safety and access to help, close gaps, and ensure that the County is a safe, convenient, and attractive place to walk.

A PMP can help establish a Pedestrian Route Network and emphasize safe routes to schools and connections to transit. The network can include streets, walkways, and trails that connect schools, libraries, parks, neighborhoods, and commercial districts throughout the County. It identifies priority street segments along these routes for targeted improvements. It can also identify new pedestrian design elements to promote pedestrian safety and access throughout the County.

Currently, County policy is for new sidewalk construction to be completed only when federal or state grant funding is received or as new developments are constructed and added into the County-maintained road network system.

There are approximately 225 centerline miles of roads in the urbanized areas of the County. The County currently has an inventory of approximately 160 miles of sidewalk, so potentially, up to an additional 290 miles could be needed. However, there are various areas in the County that, due to existing road characteristics, sidewalk improvements may not be feasible. A PMP would identify these areas and address pedestrian route deficiencies to public facilities, schools, and other commercial areas. A comprehensive assessment of each urbanized area would need to be

evaluated for deficiencies and pedestrian improvements needed for enhancing connectivity, accessibility, and the safety of the general public.

A PMP will also help create an inventory of existing curb ramps and identify the future needs along the existing sidewalks and on any network gaps identified. This can include data on the geometrics as well as conditions, repair costs, etc.

Finally, the PMP should result in a list of prioritized pedestrian projects for the County, whether sidewalks, curb ramps, or other needs. This list can then be used when applying for federal and state funding.

Other Transportation Assets

In addition to assets described earlier, there are other transportation assets like retaining walls, traffic signs, pavement markings, guardrails, and reflectors which form an essential part of the County's overall transportation infrastructure. While in aggregate, they are not expected to have as high a value as roads or storm drains; nonetheless, they form an essential part of the County's overall transportation infrastructure, and therefore, should be included in an inventory study.

With the current technologies available today, it is possible to capture many of these assets in a digitized format from a moving vehicle at minimal costs. The current state of the art is to capture the asset location (or missing gaps), locate them with a global positioning system (GPS), and then map them on a geographic information system (GIS) so that they can be spatially displayed. The information is then used for both planning and design purposes.

4.2 Cost of Planning Studies

Table 2 below summarizes the cost estimates to perform these studies. These costs are based on our experience with other agencies and their approximate costs. The ranges provided allow for different levels of detail in the scope of work, ranging from preparing policy-level documents only to identifying field projects with cost estimates.

Table 2. Summary of Costs for Planning Studies

Type of Study	Approximate Costs
Drainage Improvements	$300,000 - $500,000
Bridges	$1,500,000 - $2,000,000
Pedestrian Master Plan	$150,000 - $350,000
Other Transportation Items	$200,000 - $350,000
Totals	**$ 2.15 - $ 3.2 million**

Chapter 5. Summary

In summary, the County of Ventura PWATD is responsible for a large transportation network, with a value of over $1.68 billion, as discussed in Chapter 1 (Table 1 is reproduced below).

Table 3. Overview of Assets Maintained by Ventura County's Public Works Agency Transportation Department

Asset Type	Approximate Quantities	Unit	Approximate Value
Roadway	544	Miles	$ 850 M
Curb and gutter	380	Miles	$ 90 M
Sidewalk	160	Miles	$ 33.8 M
Shoulder (Unpaved)	696	Miles	$ 12.8 M
Shoulder (Paved)	70	Miles	$ 143 M
Storm Drain	60	Miles	$ 42 M
ADA Ramps	1210	Nos.	$ 3 M
Traffic Signals	37	Nos.	$ 9 M
Bridges	158	Nos.	$ 477 M
Bike Path	45	Miles	$ 0.36 M
Catch Basins and Drainage Inlets	2500	Number	$ 4.3 M
Culverts	104,000	Feet	$ 18.2 M
		TOTAL	**$ 1683.5 M**

Multiple sources of information from the County (Appendix A) were reviewed to create a comprehensive list of capital projects.

The prioritization criteria developed were based on four categories:

1. Benefits to users
2. Source of project
3. Safety
4. Community support

In addition, the review indicated that future studies are needed to address additional infrastructure deficiencies. Therefore, planning studies to estimate these gaps have also been recommended.

Finally, a prioritized list of projects was created which identified all known projects that are expected to improve existing levels of service and safety to the general public (see Appendix B).

APPENDIX A

List of Reference Files from County

Document Name	Electronic File Name
Ventura County General Plan, 2010	VC_GeneralPlan_Goals_Policies_and_Programs_4-6-10.pdf
Ventura County - Listing of Projects Rev. 17 (Excel sheet)	Listing_of_Projects_Rev-17.xls
Final - Subsequent Environmental Impact Report for Focused General Plan Update, Ventura County, 2005	VC_FINAL Subseq Env Report Update to GeneralPlan.pdf
Ventura County Congestion Management Program, 2009	Congestion Management Program_2009_Chapter-7.pdf
Traffic Impact Mitigation Fee program engineering report, 2001	VC TIMF-2001-02 Program.pdf
Ventura County Planned Capital Projects, 2011	Transportation CIP Plan all sheets FY 2011-16.pdf
Ventura County Bicycle Master Plan, 2007	Ventura County Bike Plan Final-2008.pdf
County of Ventura - Transportation Department Memorandum - Prioritizing installation of future traffic signal, 2001	Prioritizing Signals.pdf
General Plan Amendment No. GPA 0701 (2007)	General Plan Amended No GPA 0701_Item43-March-29-2007.pdf
Priority number equations, Ventura County PWA -Transportation Department (Advanced planning section)	Priority Number Equations.doc
2002 -Transportation department internal assessment (Excel sheet)	2002-TransportationDepart_Assessment.xls
Traffic Impact Mitigation Fee, Ordinance No. 4246, (2001)	Traffic Impact Mitigation Fee (TIMF) Ordinance No. 4246.pdf
Ventura County - Road index and inventory (description of contents) PDF file	1_Index and Inventory Description of Contents.pdf
Ventura County - Roadway inventory map PDF file	2_RoadInventory_Maps.pdf
Ventura County - Roadway inventory listing PDF file	3_RoadInventory_Listing.pdf
Sidewalk ordinance No. 4355 - Landowner responsibility and liability for sidewalk safety and maintenance (2006)	Sidewalk Ordinance No. 4355.pdf
Ventura County - GIS database: Strategic Master Plan (MS Access)	VC_GIS-StrategicMasterPlanRef.mdb
Ventura County - Inventory - Transportation infrastructure summary (Excel sheet)	VenturaCounty_Inventory Transp-Infrastructure-Rev4.xls
Ventura County Road Inventory (Excel sheet)	Copy_RoadInventory_Database.xls
Signal Priority list (Excel sheet)	Copy of Signal Priority 2008.xls
Ventura County - Listing of Projects Rev. 12 (Excel sheet)	Listing_of_Projects_Rev-12.xls
Strategic Infrastructure Assessment Plan for Transportation Department	Strategic Plan ideas-Rev6.doc
Ventura County Bridge Inspections Report 2010 Project No. 50462	Ventura Marginal Estimates.PDF
Ventura County Maintenance and Loading Rate Analysis Summary Report	Ventura Summary Report.PDF
Ventura County Bridge Inspections (Excel Sheet)	78 VC Small bridges Ratings_4.xlsx

Ventura County Culvert Length Data (Excel Sheet)	Culverts_Calculation_Of_Pipe.xls
FHWA Safety Report Program	http://safety.fhwa.dot.gov/tools/crf/resources/fhwasa08011/

APPENDIX B

Strategic Master Plan Priority List

VENTURA COUNTY PUBLIC WORKS AGENCY
TRANSPORTATION DEPARTMENT STRATEGIC MASTER PLAN
Prioritization of Capital Projects

***Source of Input**: **VCGP** - Ventura County General Plan, **VCGP-EIR** - Supplemental Environmental Report to General Plan, **VCCMP**- Ventura County Congestion Management Program, **TIMF** - Traffic Impact Mitigation Fee Report, **VCBMP** - Ventura County Bicycle Master Plan, **FTSPL** - Future Traffic Study Priority List, **2002 Assessment** - In house assessment of areas needing improvements (2001/02)

LOS - Level of Service
ADT - Average Daily Traffic

CRF - Crash Reduction Factor

		General Project Information								Traffic Info			User Benefit (UB) - Ranking Categories			Safety Factors		Priority Criteria Ranking				
2012 Rev. Priority No.	2011 Orig. Priority No.	Project Name	Location	Project Description	Project Type	On/Off System Road	Supervisorial Dist.	*Source of Input	Estimated 2011 Cost	Lanes	ADT[1]	LOS[1]	A-1 Priority from Original Plan (Ped/ Bike)	A-2 Connectivity (Ped/ Bike)	A-3 LOS/ ADT (Motorist)	C-1 Counter Measure Ranking	C-2 CRF	(A) UB Total	(B) Source Input	(C) Safety	Final Project Score (A+B+C)	Adjusted Score
1	2	Harbor Boulevard Widening	Oxnard C/L - Ventura C/L	Widen to 4 lanes and replacement of existing bridge	Road Improvements	On	5	VCCMP, 2002 Assessment, TIMF	$58,700,000	2	23000	E			5	5	5	5.0	5.0	5.0	15.0	15-01
2	4	Wendy Drive Bridge Widening	South Branch Arroyo Conejo bridge	Widen to 4 lanes	Bridge Widening	On	2	VCGP-EIR, VCGP, VCCMP, 2002 Assessment, TIMF	$1,100,000	2	21000	E			5	5	5	5.0	5.0	5.0	15.0	15-02
3	3	Harbor Boulevard @ Gonzales Road Intersection Improvements	@ Gonzales Road	Add 2nd southbound through lane and 2nd northbound through lane	Intersection Improvements	On	5	VCCMP, 2002 Assessment, TIMF	$2,560,000	2	21000/5000	E/E			5	4	4	5.0	5.0	4.0	14.0	14-01
4	5	Santa Clara Ave Widening	Oxnard C/L - Hwy 118	Widen to 4 lanes and paved shoulder for bike route	Road Improvements	On	5	VCGP-EIR, VCGP, VCCMP, 2002 Assessment, TIMF	$26,780,000	2	20000	E			5	4	4	5.0	5.0	4.0	14.0	14-02
5	6	Pleasant Valley Rd @ E. 5th St Intersection Improvements	@ East 5th St	Add 2nd southbound through lane and 2nd northbound through lane	Intersection Improvements	On	3	VCCMP, 2002 Assessment, TIMF	$1,800,000	2	19000/18000	E/E			5	4	4	5.0	5.0	4.0	14.0	14-03
6	9	Central Ave Widening	Santa Clara Ave - Camarillo C/L	Widen to 4 lanes	Road Improvements	On	5	VCGP-EIR, VCGP, VCCMP, 2002 Assessment, TIMF	$6,430,000	2	17000	E			5	4	4	5.0	5.0	4.0	14.0	14-04
7	1	Victoria Ave Widening	Gonzales Rd - Olivas Park Dr (County Maintained: 247s riverbridge - 119s Olivas Pk)	Widen to 6 lanes	Road Improvements	On	1 & 5	VCGP-EIR, VCGP, 2002 Assessment, TIMF	$16,540,000	4	53000	E			5	4	3	5.0	5.0	3.5	13.5	14-05
8	7	Pleasant Valley Rd Widening	Oxnard C/L - Las Posas Rd	Widen to 4 lanes	Road Improvements	On	3 & 5	VCGP-EIR, VCGP, VCCMP, 2002 Assessment, TIMF	$19,620,000	2	19000	E			5	3	4	5.0	5.0	3.5	13.5	14-06
9	4	Wendy Dr Re-Striping to 4 Lanes	Borchard Rd - Thousand Oaks C/L	Re-stripe to 4 lanes and surface repairs	Road Improvements	On	2	VCGP-EIR, VCGP, VCCMP, 2002 Assessment, TIMF	$320,000	2	21000	E			5	4	2	5.0	5.0	3.0	13.0	13-01
10	14	Channel Islands Blvd Widening	Oxnard C/L - Rice Ave	Widen to 4 lanes and construct bike lanes	Road Improvements	On	5	VCGP-EIR, 2002 Assessment	$1,830,000	2	13000	D			4	4	3	4.0	5.0	3.5	12.5	13-02
11	15	Las Posas Rd Widening	Hueneme Rd - 5th St	Widen to 4 lanes	Road Improvements	On	3	VCGP-EIR, 2002 Assessment	$6,040,000	2	13000	D			4	4	3	4.0	5.0	3.5	12.5	13-03
12	16	Olivas Park Dr Widening	Telephone Rd - Seaborg Dr (County Maintains: Telephone - 385w Palma & 15e Palma Dr - 205w Victoria)	Widen to 4 lanes	Road Improvements	On	1	VCGP-EIR	$4,530,000	2	12600	D			4	4	3	4.0	5.0	3.5	12.5	13-04
13	17	Hueneme Rd Widening - Phase 1	Oxnard C/L - Rice Ave	Widen to 4 lanes	Road Improvements	On	2 & 3	VCGP-EIR, VCGP, VCCMP, 2002 Assessment	$6,860,000	2	11000	D			4	4	3	4.0	5.0	3.5	12.5	13-05
14	23	Bristol Rd Improvements	Union Pacific RR - 170' W/o Montgomery Ave	Road realignment, drainage improvements and shoulder widening for bike lanes	Road Improvements	On	1	VCGP-EIR, 2002 Assessment	$2,900,000	2	10000	C			3	5	3	3.0	5.0	4.0	12.0	12-01
15	24	Hueneme Rd Widening - Phase II	Rice Ave - Las Posas Rd	Widen to 4 lanes	Road Improvements	On	2 & 3	VCGP-EIR, VCGP	$22,340,000	2	9000	C			3	4	3	3.0	5.0	3.5	11.5	12-02
16	13	Telegraph Rd Bike Lane	Ventura C/L - Santa Paula C/L	Construct 4.71 miles of Class II bike lanes and drainage improvements	Pedestrian/Bike Lane	On	1 & 3	VCBMP, 2002 Assessment	$14,680,000	2	8000	D	5	5		5	2	5.0	3.0	3.5	11.5	12-03
17	26	Las Posas Rd Widening	5th St - Camarillo C/L	Widen to 4 lanes	Road Improvements	On	3	VCGP-EIR, 2002 Assessment	$3,020,000	2	7000	C			3	4	3	3.0	5.0	3.5	11.5	12-04
18	65	Rose Ave Widening	Hueneme Rd - Oxnard C/L	Widen to 4 lanes (new road segment)	Road Improvements	On	5	VCGP, 2002 Assessment	$6,040,000	2					3	4	3	3.0	5.0	3.5	11.5	12-05
19	43	Grimes Canyon Rd @ SR 118 Traffic Improvement	@ SR 118	Add 2nd WBT and 2nd EBT & Drainage Improvements	Intersection Improvements	On	4	2002 Assessment, TIMF	$620,000	2	2600/17000	B/E			5	3	3	5.0	3.0	3.0	11.0	11-01
20	10	Pleasant Valley Rd Bike Lane	Pancho Rd - SR-1 (County maintains: 120e SR1 NB off ramp - Las Posas Rd).	Construct 8.80 miles of Class II bike lane	Pedestrian/Bike Lane	On	3 & 5	VCBMP	$450,000	2	19000	E	5	5		4	2	5.0	3.0	3.0	11.0	11-02
21	12	Las Posas Rd Bike Lane	Pleasant Valley Rd - Laguna Rd	Construct 2.01 miles of Class II bike lane	Pedestrian/Bike Lane	On	3	VCBMP	$380,000	2	13000	D	5	5		4	2	5.0	3.0	3.0	11.0	11-03
22	27	Box Canyon Rd Improvements	Los Angeles Co line - Santa Susana Pass Rd	Realign curves, widen shoulders, construct passing lanes	Road Improvements	Off	4	VCGP-EIR	$7,550,000	2	4600	C			3	3	2	3.0	5.0	2.5	10.5	11-04

VENTURA COUNTY PUBLIC WORKS AGENCY
TRANSPORTATION DEPARTMENT STRATEGIC MASTER PLAN
Prioritization of Capital Projects

***Source of Input**: **VCGP** - Ventura County General Plan, **VCGP-EIR** - Supplemental Environmental Report to General Plan, **VCCMP**- Ventura County Congestion Management Program, **TIMF** - Traffic Impact Mitigation Fee Report, **VCBMP** - Ventura County Bicycle Master Plan, **FTSPL** - Future Traffic Study Priority List, **2002 Assessment** - In house assessment of areas needing improvements (2001/02)

LOS - Level of Service
ADT - Average Daily Traffic

CRF - Crash Reduction Factor

		General Project Information								Traffic Info			User Benefit (UB) - Ranking Categories			Safety Factors		Priority Criteria Ranking				
2012 Rev. Priority No.	2011 Orig. Priority No.	Project Name	Location	Project Description	Project Type	On/Off System Road	Supervisorial Dist.	*Source of Input	Estimated 2011 Cost	Lanes	ADT[1]	LOS[1]	A-1 Priority from Original Plan (Ped/ Bike)	A-2 Connectivity (Ped/ Bike)	A-3 LOS/ ADT (Motorist)	C-1 Counter Measure Ranking	C-2 CRF	(A) UB Total	(B) Source Input	(C) Safety	Final Project Score (A+B+C)	Adjusted Score
23	18	Hueneme Rd Bike Lane	Las Posas Rd - CSUCI	Construct 0.86 miles of Class II bike lane	Pedestrian/Bike Lane	On	3	VCBMP	$280,000	2	10000	C	5	3		4	2	4.0	3.0	3.0	10.0	10-01
24	19	Las Posas Rd Bike Lane	Laguna Rd - SR-1	Construct 4.32 miles of Class II bike lane	Pedestrian/Bike Lane	On	2 & 3	VCBMP	$230,000	2	10000	C	5	3		4	2	4.0	3.0	3.0	10.0	10-02
25	21	S. Sespe St Bike Lane	S Mountain Rd - Pasadena Ave (Bardsdale Av - Pasadena Av Off System)	Construct 1.07 miles of Class III bike lane	Pedestrian/Bike Lane	On & Off	3	VCBMP	$220,000	2	1900	A	5	3		4	2	4.0	3.0	3.0	10.0	10-03
26	20	Broadway Rd Bike Lane	Grimes Canyon/SR-23 - Walnut Canyon Rd	Construct 1.34 miles of Class III bike lane	Pedestrian/Bike Lane	On	4	VCBMP	$270,000	2	9000	C	5	3		4	2	4.0	3.0	3.0	10.0	10-04
27	45	Cawelti Rd Widening	Las Posas Rd - Lewis Rd	Amend General Plan and widen to 4 lanes	Road Improvements	Off	3	VCGP-EIR, VCGP	$6,040,000	2	2600	B			2	4	2	2.0	5.0	3.0	10.0	10-05
28	22	Pasedena Ave Bike Lane	Sespe St - Chambersburg Rd	Construct 1.51 miles of Class III Bike lane	Pedestrian/Bike Lane	Off	3	VCBMP	$310,000	2	1000	B	5	3		4	2	4.0	3.0	3.0	10.0	10-06
29	44	Hitch Blvd Realignment	Grimes Canyon Rd @ SR 118	Grimes Canyon Rd and Hitch Blvd realignment at SR-118 (no improvements to bridge)	Road Improvements	Off	2 & 4	VCCMP	$2,600,000	2	2900	B			2	3	2	2.0	5.0	2.5	9.5	10-07
30	28	Wendy Dr @ Gerald Dr Intersection Improvements	Wendy Dr @ Gerald Dr	Signalization and interconnect between Gerald Drive and Ruth Drive	Intersection Improvements	On	2	FTSPL	$400,000	2	21000/9 00	E/A			5	4	2	5.0	1.0	3.0	9.0	9-01
31	30	Rose Ave @ Simon Way Intersection Improvements	Rose Ave @ Simon Way	Signalization and interconnect between Simon Way and Walnut Drive	Intersection Improvements	On	5	FTSPL	$490,000	4	50000	E			5	4	2	5.0	1.0	3.0	9.0	9-02
32	38	Rice Ave Bike Lane	5th St - SR-1	Construct 2.06 miles of Class III bike lane	Pedestrian/Bike Lane	On	3 & 5	VCBMP	$420,000	4	50000	E	1	5		4	2	3.0	3.0	3.0	9.0	9-03
33	8	Moorpark Rd Bike Lanes	Santa Rosa Rd - Tierra Rejada Rd	Construct 1.36 miles of Class II bike Lane	Pedestrian/Bike Lane	On	2 & 4	VCBMP	$270,000	2	18700	E	1	5		4	2	3.0	3.0	3.0	9.0	9-04
34	40	Rose Ave Bike Lane	Los Angeles Ave - Hwy 101	Construct 3.56 miles of Class III bike lane	Pedestrian/Bike Lane	On	5	VCBMP	$720,000	2	18000	B	1	5		4	2	3.0	3.0	3.0	9.0	9-05
35	41	Hueneme Rd Bike Lane - Phase III	Oxnard C/L - Las Posas Road	Construct 5.32 miles of Class II bike lane	Pedestrian/Bike Lane	On	2 & 3	VCBMP	$1,330,000	2	11000	D	1	5		4	2	3.0	3.0	3.0	9.0	9-06
36	85	W. Potrero Rd Improvements	Hueneme Rd - Thousand Oaks C/L	Alignment and drainage improvements and paved shoulders (bike lanes)	Road Improvements	On	2	VCBMP, 2002 Assessment	$7,980,000	2	3400	B			2	4	4	2.0	3.0	4.0	9.0	9-07
37	42	S. Mountain Rd Bike Lane	Santa Paula C/L - Balcom Canyon Rd	Construct 6.81 miles of Class III bike lane	Pedestrian/Bike Lane	On	3	VCBMP	$1,370,000	2	3000	B	1	5		4	2	3.0	3.0	3.0	9.0	9-08
38	46	Rose Ave @ SR 118 Traffic Improvement	@ SR 118	Dual left turn lanes	Intersection Improvements	On	5	2002 Assessment	$480,000	4/2	9000/27 000	C/E			5	3	2	5.0	1.0	2.5	8.5	9-09
39	29	Pleasant Valley Rd/Sturgis Rd Intersection Improvements	Pleasant Valley Rd @ Sturgis Rd	Signalization and add right turn lane	Intersection Improvements	On	3	FTSPL	$560,000	2	19000/4 000	E/B			5	3	2	5.0	1.0	2.5	8.5	9-10
40	48	Broadway Drainage & Shoulder Improvements	Stockton Rd - SR 23	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	4	2002 Assessment	$1,610,000	2	2400	B	5	3		5	2	4.0	1.0	3.5	8.5	9-11
41	61	Foothill Rd Bike Lane	Ventura C/L - Santa Paula C/L	Construct 5.96 miles of Class III Bike lane, road alignment and drainage improvements	Pedestrian/Bike Lane	On	1 & 3	VCBMP, 2002 Assessment	$8,890,000	2	2000	B	1	3		5	2	2.0	3.0	3.5	8.5	9-12
42	49	Sespe St Drainage & Shoulder Improvements	South Mountain Rd - Bardsdale Ave	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3	2002 Assessment	$600,000	2	1900	A	5	3		5	2	4.0	1.0	3.5	8.5	9-13
43	91	Rose Ave Widening	Central Ave - SR 118	Widen road	Road Improvements	On	5	2002 Assessment	$7,010,000	2	9000	C			3	4	4	3.0	1.0	4.0	8.0	8-01
44	57	Rice Rd Bike Lane	Baldwin Heights - Lomita Dr	Construct 2.80 miles of Class II bike lane	Pedestrian/Bike Lane	On	1	VCBMP	$480,000	2	3200	B	1	3		4	2	2.0	3.0	3.0	8.0	8-02

VENTURA COUNTY PUBLIC WORKS AGENCY
TRANSPORTATION DEPARTMENT STRATEGIC MASTER PLAN
Prioritization of Capital Projects

***Source of Input**: **VCGP** - Ventura County General Plan, **VCGP-EIR** - Supplemental Environmental Report to General Plan, **VCCMP**- Ventura County Congestion Management Program, **TIMF** - Traffic Impact Mitigation Fee Report, **VCBMP** - Ventura County Bicycle Master Plan, **FTSPL** - Future Traffic Study Priority List, **2002 Assessment** - In house assessment of areas needing improvements (2001/02)

LOS - Level of Service
ADT - Average Daily Traffic

CRF - Crash Reduction Factor

		General Project Information								Traffic Info			User Benefit (UB) - Ranking Categories			Safety Factors		Priority Criteria Ranking				
2012 Rev. Priority No.	2011 Orig. Priority No.	Project Name	Location	Project Description	Project Type	On/Off System Road	Supervisorial Dist.	*Source of Input	Estimated 2011 Cost	Lanes	ADT[1]	LOS[1]	A-1 Priority from Original Plan (Ped/ Bike)	A-2 Connectivity (Ped/ Bike)	A-3 LOS/ ADT (Motorist)	C-1 Counter Measure Ranking	C-2 CRF	(A) UB Total	(B) Source Input	(C) Safety	Final Project Score (A+B+C)	Adjusted Score
45	58	Santa Ana Rd Bike Lane	Ventura River Trail - SR 150	Construct 6.30 miles of Class III bike lane	Pedestrian/Bike Lane	On	1	VCBMP	$3,000,000	2	3000	B	1	3		4	2	2.0	3.0	3.0	8.0	8-03
46	59	Torrey Rd Bike Lane	E Guiberson Rd - Over Riverbed	Construct 0.37 miles of Class III bike lane	Pedestrian/Bike Lane	Off	3	VCBMP	$80,000	2	3000	B	1	3		4	2	2.0	3.0	3.0	8.0	8-04
47	60	W - E Guiberson Bike Lane	SR-23 - Torrey Rd	Construct 7.01 miles of Class III bike lane	Pedestrian/Bike Lane	Off	3	VCBMP	$1,060,000	2	3000	B	1	3		4	2	2.0	3.0	3.0	8.0	8-05
48	62	Laguna Rd Bike Lane	Lewis Rd - Pleasant Valley Rd	Construct 4.21 miles of Class II bike lane, feasibility study needed	Pedestrian/Bike Lane	On	3 & 5	VCBMP	$1,770,000	2	2000	A	1	3		4	2	2.0	3.0	3.0	8.0	8-06
49	63	Bardsdale Ave Bike Lane	Sespe St - Chambersburg Rd	Construct 1.26 miles of Class III bike lane	Pedestrian/Bike Lane	On	3	VCBMP	$200,000	2	1300	A	1	3		4	2	2.0	3.0	3.0	8.0	8-07
50	64	Pidduck Rd/Navalair Rd Bike Lane	Rice Ave - Las Posas Rd (County does not maintain entire section)	Construct 4.74 miles of Class III bike lane	Pedestrian/Bike Lane	Off	2 & 3	VCBMP	$950,000	2			1	3		4	2	2.0	3.0	3.0	8.0	8-08
51	67	Ventura Ave Drainage & Shoulder Improvements	Ventura C/L - Casitas Vista Rd	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	1	2002 Assessment	$8,320,000	2	15000	D	1	5		5	2	3.0	1.0	3.5	7.5	8-09
52	69	Wooley Rd Drainage & Shoulder Improvements	Oxnard C/L - Rice Ave	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	5	2002 Assessment	$1,460,000	2	10000	C	1	5		5	2	3.0	1.0	3.5	7.5	8-10
53	128	Hueneme Rd @ Wood Rd Intersection Improvements	Hueneme Rd @ Wood Rd	Signalization improvements	Intersection Improvements	On	2 & 3	FTSPL	$410,000	2/2	9100	C			4	3	2	4.0	1.0	2.5	7.5	8-11
54	70	Rose Ave Drainage & Shoulder Improvements	Oxnard C/L - SR 118	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	5	2002 Assessment	$2,600,000	2	9000	D	1	5		5	2	3.0	1.0	3.5	7.5	8-12
55	71	El Roblar Dr Drainage & Shoulder Improvements	Rice Rd - SR 33	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	1	2002 Assessment	$2,460,000	2	8500	C	1	5		5	2	3.0	1.0	3.5	7.5	8-13
56	75	Tico Rd Drainage & Shoulder Improvements	SR 150 - Lomita Ave	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	1	2002 Assessment	$2,350,000	2	4000	B	1	5		5	2	3.0	1.0	3.5	7.5	8-14
57	74	Telegraph Rd Shoulder	Harvard Blvd - Hallock Dr	Paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3	2002 Assessment	$530,000	2	4000	B	1	5		4	2	3.0	1.0	3.0	7.0	7-01
58	143	South Mountain Rd Alignment	Santa Paula C/L - Sespe St	Alignment and drainage improvements and paved shoulders (bike lanes)	Road Improvements	On	3	2002 Assessment	$13,930,000	2	3000	B			2	4	4	2.0	1.0	4.0	7.0	7-02
59	90	Springville Rd Drainage & Shoulder Improvements	West end - Camarillo C/L	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3	2002 Assessment	$880,000	2	10000	C	1	3		5	2	2.0	1.0	3.5	6.5	7-03
60	92	Simon Way Drainage & Shoulder Improvements	Vineyard Ave - Rose Ave	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	5	2002 Assessment	$1,860,000	2	9000	C	1	3		5	2	2.0	1.0	3.5	6.5	7-03
61	94	Valley Vista Dr Drainage & Shoulder Improvements	519' N/o Encino - 460" S/o Vista del Mar	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3	2002 Assessment	$310,000	2	6900	C	1	3		5	2	2.0	1.0	3.5	6.5	7-04
62	96	Valley Vista Dr Drainage & Shoulder Improvements	291' N/o Vista del Mar - Fairway Dr	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3	2002 Assessment	$1,110,000	2	6000	C	1	3		5	2	2.0	1.0	3.5	6.5	7-05
63	99	La Luna Ave Drainage & Shoulder Improvements	SR 150 - SR 33	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	1	2002 Assessment	$4,930,000	2	4000	B	1	3		5	2	2.0	1.0	3.5	6.5	7-06
64	101	Mission Dr Drainage & Shoulder Improvements	140s Catalina Dr - N Loop Dr	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3	2002 Assessment	$130,000	2	3530	B	1	3		5	2	2.0	1.0	3.5	6.5	7-07
65	102	Old Telegraph Rd Drainage & Shoulder Improvements	SR 126 - West end Bridge 487	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3	2002 Assessment	$2,160,000	2	3300	B	1	3		5	2	2.0	1.0	3.5	6.5	7-08
66	104	Rice Rd Drainage & Shoulder Improvements	Arcata Rd - Fairview Rd	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	1	2002 Assessment	$6,810,000	2	3200	B	1	3		5	2	2.0	1.0	3.5	6.5	7-09
67	105	Loop Dr West Drainage & Shoulder Improvements	Camarillo C/L - N Loop Dr	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3	2002 Assessment	$1,730,000	2	3060	B	1	3		5	2	2.0	1.0	3.5	6.5	7-10
68	141	Creek Rd Alignment	SR 33 - Ojai C/L	Alignment and drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	1	2002 Assessment	$14,470,000	2	3000	B			2	4	3	2.0	1.0	3.5	6.5	7-11
69	142	Lake Sherwood Dr Alignment	E Potrero Rd - E Potrero Rd	Alignment and drainage improvements and paved shoulders (bike lanes)	Road Improvements	On	2	2002 Assessment	$3,110,000	2	3000	B			2	4	3	2.0	1.0	3.5	6.5	7-12
70	107	Stroube St Drainage & Shoulder Improvements	Vineyard Ave - Rose Ave	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	5	2002 Assessment	$2,030,000	2	2600	B	1	3		5	2	2.0	1.0	3.5	6.5	7-14

VENTURA COUNTY PUBLIC WORKS AGENCY
TRANSPORTATION DEPARTMENT STRATEGIC MASTER PLAN
Prioritization of Capital Projects

***Source of Input**: **VCGP** - Ventura County General Plan, **VCGP-EIR** - Supplemental Environmental Report to General Plan, **VCCMP**- Ventura County Congestion Management Program, **TIMF** - Traffic Impact Mitigation Fee Report, **VCBMP** - Ventura County Bicycle Master Plan, **FTSPL** - Future Traffic Study Priority List, **2002 Assessment** - In house assessment of areas needing improvements (2001/02)

LOS - Level of Service
ADT - Average Daily Traffic

CRF - Crash Reduction Factor

		General Project Information								Traffic Info			User Benefit (UB) - Ranking Categories			Safety Factors		Priority Criteria Ranking				
2012 Rev. Priority No.	2011 Orig. Priority No.	Project Name	Location	Project Description	Project Type	On/Off System Road	Supervisorial Dist.	*Source of Input	Estimated 2011 Cost	Lanes	ADT[1]	LOS[1]	A-1 Priority from Original Plan (Ped/ Bike)	A-2 Connectivity (Ped/ Bike)	A-3 LOS/ ADT (Motorist)	C-1 Counter Measure Ranking	C-2 CRF	(A) UB Total	(B) Source Input	(C) Safety	Final Project Score (A+B+C)	Adjusted Score
71	144	Country Club Dr Alignment	Creek Rd - Ojai C/L	Alignment and drainage improvements and paved shoulders (bike lanes)	Road Improvements	On	1	2002 Assessment	$240,000	2	2600	B			2	4	3	2.0	1.0	3.5	6.5	7-15
72	145	Grimes Canyon Rd Improvement	SR 118 - Broadway	Alignment and drainage improvements and paved shoulders (bike lanes)	Road Improvements	On	4	2002 Assessment	$4,220,000	2	2600	B			2	4	3	2.0	1.0	3.5	6.5	7-16
73	108	Grand Ave Drainage & Shoulder Improvements	Ojai C/L - McAndrew Rd	Drainage improvements and graded shoulders	Pedestrian/Bike Lane	On	1	2002 Assessment	$2,980,000	2	2500	B	1	3		5	2	2.0	1.0	3.5	6.5	7-17
74	109	Santa Ana Blvd Drainage & Shoulder Improvements	Santa Ana Rd - SR33	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	1	2002 Assessment	$2,240,000	2	2500	B	1	3		5	2	2.0	1.0	3.5	6.5	7-18
75	147	Santa Ana Rd Alignment	Casitas Vista Rd - SR 150	Alignment and drainage improvements and paved shoulders (bike lanes)	Road Improvements	On	1	2002 Assessment	$7,990,000	2	2500	B			2	4	3	2.0	1.0	3.5	6.5	7-19
76	112	Villanova Rd Drainage & Shoulder Improvements	SR 33 - SR 33	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	1	2002 Assessment	$3,690,000	2	2300	B	1	3		5	2	2.0	1.0	3.5	6.5	7-20
77	114	Etting Rd Drainage & Shoulder Improvements	Dodge Rd - Wood Rd	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3 & 5	2002 Assessment	$3,100,000	2	2000	B	1	3		5	2	2.0	1.0	3.5	6.5	7-21
78	115	Laguna Rd Drainage & Shoulder Improvements	Pl. Valley Rd - 2300' E/o Las Posas Rd	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3 & 5	2002 Assessment	$4,760,000	2	2000	B	1	3		5	2	2.0	1.0	3.5	6.5	7-22
79	116	Olds Rd Drainage & Shoulder Improvements	Hueneme Rd - Oxnard C/L	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3	2002 Assessment	$2,150,000	2	2000	A	1	3		5	2	2.0	1.0	3.5	6.5	7-23
80	151	Balcom Canyon Rd Alignment	SR 118 - South Mountain Rd	Alignment and drainage improvements and paved shoulders (bike lanes)	Road Improvements	On	2 & 3	2002 Assessment	$12,000,000	2	2000	B			2	4	3	2.0	1.0	3.5	6.5	7-24
81	152	Bradley Rd Alignment	SR 118 - Balcom Canyon Rd	Alignment and drainage improvements and paved shoulders (bike lanes)	Road Improvements	On	2	2002 Assessment	$6,990,000	2	2000	B			2	4	3	2.0	1.0	3.5	6.5	7-25
82	117	Wood Rd Drainage & Shoulder Improvements	Naval Air Rd - Pleasant Valley Rd	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	5	2002 Assessment	$4,820,000	2	1800	A	1	3		5	2	2.0	1.0	3.5	6.5	7-26
83	119	Bardsdale Ave Drainage & Shoulder Improvements	Sespe St - SR 23	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3	2002 Assessment	$1,790,000	2	1300	A	1	3		5	2	2.0	1.0	3.5	6.5	7-27
84	120	Loop Dr East Drainage & Shoulder Improvements	Camarillo C/L - N Loop Dr	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3	2002 Assessment	$1,220,000	2	1300	A	1	3		5	2	2.0	1.0	3.5	6.5	7-28
85	123	La Vista Ave Drainage & Shoulder Improvements	SR 118 - Center Rd	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3	2002 Assessment	$910,000	2	700	A	1	3		5	2	2.0	1.0	3.5	6.5	7-29
86	135	Corsicana Dr Drainage & Shoulder Improvements	CDS - Rose Ave	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	5	2002 Assessment	$1,880,000	2			1	3		5	2	2.0	1.0	3.5	6.5	7-30
87	137	La Loma Ave Drainage & Shoulder Improvements	Center Rd - Aggen Rd	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	2 & 3	2002 Assessment	$5,410,000	2			1	3		5	2	2.0	1.0	3.5	6.5	7-31
88	139	Loop Dr North Drainage & Shoulder Improvements	W Loop Dr - E Loop Dr	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3	2002 Assessment	$1,690,000	2			1	3		5	2	2.0	1.0	3.5	6.5	7-32
89	88	Kanan Rd Widening	Doubletree Rd - Deerhill Rd	Construct eastbound Class I bike lane	Pedestrian/Bike Lane	On	2	2002 Assessment	$300,000	4	13600	A	1	3		4	2	2.0	1.0	3.0	6.0	6-01
90	89	Doris Ave Shoulder	Victoria Ave - Oxnard C/L	Paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	5	2002 Assessment	$1,080,000	2	10000	C	1	3		4	2	2.0	1.0	3.0	6.0	6-02
91	97	Patterson Rd Shoulder	Teal Club Rd - Doris Ave	Paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	5	2002 Assessment	$520,000	2	5000	B	1	3		4	2	2.0	1.0	3.0	6.0	6-03
92	103	Fairway Dr Shoulder	Valley Vista Dr - Fairway Ct	Paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3	2002 Assessment	$1,230,000	2	3200	B	1	3		4	2	2.0	1.0	3.0	6.0	6-04
93	106	Casitas Vista Rd Shoulder	53' W/o Ventura Ave - Santa Ana Rd	Paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	1	2002 Assessment	$130,000	2	2700	B	1	3		4	2	2.0	1.0	3.0	6.0	6-05
94	113	Beardsley Rd Shoulder	190' W/o Ramona Dr - Ramona Dr	Paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3 & 5	2002 Assessment	$50,000	2	2200	A	1	3		4	2	2.0	1.0	3.0	6.0	6-06

VENTURA COUNTY PUBLIC WORKS AGENCY
TRANSPORTATION DEPARTMENT STRATEGIC MASTER PLAN
Prioritization of Capital Projects

***Source of Input**: **VCGP** - Ventura County General Plan, **VCGP-EIR** - Supplemental Environmental Report to General Plan, **VCCMP**- Ventura County Congestion Management Program, **TIMF** - Traffic Impact Mitigation Fee Report, **VCBMP** - Ventura County Bicycle Master Plan, **FTSPL** - Future Traffic Study Priority List, **2002 Assessment** - In house assessment of areas needing improvements (2001/02)

LOS - Level of Service
ADT - Average Daily Traffic

CRF - Crash Reduction Factor

		General Project Information								Traffic Info			User Benefit (UB) - Ranking Categories			Safety Factors		Priority Criteria Ranking				
2012 Rev. Priority No.	2011 Orig. Priority No.	Project Name	Location	Project Description	Project Type	On/Off System Road	Supervisorial Dist.	*Source of Input	Estimated 2011 Cost	Lanes	ADT[1]	LOS[1]	A-1 Priority from Original Plan (Ped/ Bike)	A-2 Connectivity (Ped/ Bike)	A-3 LOS/ ADT (Motorist)	C-1 Counter Measure Ranking	C-2 CRF	(A) UB Total	(B) Source Input	(C) Safety	Final Project Score (A+B+C)	Adjusted Score
95	121	Calle Yucca Shoulder	Calle Sequoia - North end	Paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	2	2002 Assessment	$2,340,000	2	1100	A	1	3		4	2	2.0	1.0	3.0	6.0	6-07
96	124	Ramona Dr Shoulder	Camino Concordia - Fairway Ct	Paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3	2002 Assessment	$960,000	2	690	A	1	3		4	2	2.0	1.0	3.0	6.0	6-08
97	125	Calle Arroyo Shoulder	Calle Yucca - Camino Dos Rios	Paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	2	2002 Assessment	$1,090,000	2	440	A	1	3		4	2	2.0	1.0	3.0	6.0	6-09
98	126	Calle Aurora Shoulder	Camino Concordia - Valley Vista Dr	Paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3	2002 Assessment	$580,000	2	440	A	1	3		4	2	2.0	1.0	3.0	6.0	6-10
99	130	Avocado Pl Shoulder	30n - 355n Crestview Ave	Paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3	2002 Assessment	$90,000	2			1	3		4	2	2.0	1.0	3.0	6.0	6-11
100	131	Avocado Pl Shoulder	1368n Crestview Ave - Cl Aurora	Paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3	2002 Assessment	$220,000	2			1	3		4	2	2.0	1.0	3.0	6.0	6-12
101	132	Camino Concordia Shoulder	Ramona Dr - Calle Aurora	Paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3	2002 Assessment	$820,000	2			1	3		4	2	2.0	1.0	3.0	6.0	6-13
102	136	Fairway Ct Shoulder	Ramona Dr - Fairway Dr	Paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3	2002 Assessment	$110,000	2			1	3		4	2	2.0	1.0	3.0	6.0	6-14
103	138	Loma Dr Shoulder	Camarillo C/L - E Loop Dr	Paved shoulders (bike lanes)	Pedestrian/Bike Lane	On	3	2002 Assessment	$380,000	2			1	3		4	2	2.0	1.0	3.0	6.0	6-15
104	149	Burnham Rd Alignment	Santa Ana Rd - SR 150	Alignment and drainage improvements and paved shoulders (bike lanes)	Road Improvements	On	1	2002 Assessment	$4,840,000	2	2300	A			1	4	3	1.0	1.0	3.5	5.5	6-16
105	150	Beardsley Rd Alignment	Central Ave - 413' N/o Wright Rd	Alignment improvements and paved shoulders (bike lanes)	Road Improvements	On	3 & 5	2002 Assessment	$1,640,000	2	2200	A			1	4	3	1.0	1.0	3.5	5.5	6-17
106	154	Fairview Rd Alignment	SR 33 - Ojai C/L	Alignment and drainage improvements and paved shoulders (bike lanes)	Road Improvements	Off	1	2002 Assessment	$2,950,000	2	1000	A			1	4	3	1.0	1.0	3.5	5.5	6-18
107	155	Lockwood Valley Rd Alignment	SR 33 - MP 5.0	Alignment and drainage improvements and paved shoulders (bike lanes)	Road Improvements	On	1	2002 Assessment	$6,850,000	2	900	A			1	4	3	1.0	1.0	3.5	5.5	6-19
108	156	Lockwood Valley Rd Alignment	MP 5.0 - Mutau Rd	Alignment and drainage improvements and paved shoulders (bike lanes)	Road Improvements	On	1 & 3	2002 Assessment	$17,830,000	2	900	A			1	4	3	1.0	1.0	3.5	5.5	6-20
109	157	Katherine Rd Alignment	Simi Valley C/L - Santa Susana Pass Rd	Alignment and drainage improvements and paved shoulders (bike lanes)	Road Improvements	On	4	2002 Assessment	$3,000,000	2	710	A			1	4	3	1.0	1.0	3.5	5.5	6-21
110	158	Lockwood Valley Rd Alignment	Mutau Rd - MP 25.4	Alignment and drainage improvements and paved shoulders (bike lanes)	Road Improvements	On	3	2002 Assessment	$14,360,000	2	700	A			1	4	3	1.0	1.0	3.5	5.5	6-22
111	159	Berylwood Rd Drainage & Shoulder Improvements	Aggen Rd - Bradley Rd	Drainage improvements and paved shoulders (bike lanes)	Pedestrian/Bike lane	On	2	2002 Assessment	$1,950,000	2			1	1		5	2	1.0	1.0	3.5	5.5	6-23
112	153	Reeves Rd Drainage & Shoulder Improvements	SR 150 - McAndrew Rd	Drainage improvements and graded shoulders (horse trails - CMAQ?)	Road Improvements	On	1	2002 Assessment	$1,680,000	2	2000	A			1	4	2	1.0	1.0	3.0	5.0	5-01
113	129	HWY 118 @ Balcom Cyn Rd Intersection Improvements	HWY 118 @ Balcom Cyn Rd	Signalization improvements	Intersection Improvements	On	2 & 4	FTSPL	$260,000	2/2	2000	A			1	3	2	1.0	1.0	2.5	4.5	5-02
		Bridge Improvements	Various Locations	Structurally Deficient bridges that need replacement	Studies	On/Off	ALL	Caltrans Bridge Log	$1,750,000													
		Drainage Improvements (Master Studies)	Various Locations	Drainage improvements in Urban areas; storm drains, culverts, catch basins, other drainage facilities.	Studies	Off/On	ALL	Various Studies	$400,000													
		Sidewalk Improvements (Master Studies)	Various Locations	Sidewalk Improvements at public facilities	Studies	Off/On	ALL	Various Studies	$250,000													
		Transportation Studies	Various Locations	Inventory of transportation assets	Studies	Off/On	ALL	Various Studies	$275,000													

SMP - Projects $465,640,000
Studies $2,675,000
$468,315,000

APPENDIX C
Supporting Data

This appendix contains all supporting data used to arrive at the cost calculations in the body of the report as well as in Appendix B.

The data provided in Table C-1 is derived from Caltrans 2010 contract cost data and also from data collected for various planning and design projects by Nichols Consulting Engineers, Chtd. The unit cost in table was used to calculate the approximate value of assets owned by the Ventura County Department of Transportation.

Table C-1. Assumptions for calculating value of assets

Item	Unit Cost	Assumptions	Data Source
Curb and Gutter	$ 45/lf.	6 inch curb	Nichols Consulting Engineers, Chtd. (NCE)
Sidewalk	$ 10/sqft.	4 feet wide PCC Sidewalk	NCE
Shoulder Unpaved	$ 5.22/sy.	6 inch deep class II Aggregate base	Caltrans 2010 Contract cost data
Storm drain (pipelines)	$ 133.03/lf.	12 inch Concrete pipe	Caltrans 2010 Contract cost data
ADA Ramps	$ 2500/each	Standard case	Various bids and cost estimates (NCE)
Bikeways	$ 1.5/lf	Includes stripes and pavement marking, Paving cost assumed to be included in roadway cost	Caltrans 2010 Contract cost data
Culverts	$ 175/lf	24 inch Concrete pipe	NCE
Catch basins & drain inlets	$ 1700/each	Standard 24 in. x 24 in.	Caltrans 2010 Contract cost data

Table C.2 contains unit cost assumptions for bridge repairs, and came from a 2010 Statewide Local Streets and Roads Needs Assessment Study conducted by NCE[20]. Preliminary cost estimates in Appendix B for bridge projects were based on these assumptions, if they were not already known. For bridge projects already included in the County Capital Improvement plans, the cost estimates were derived from the County.

Table C-2. Assumptions for preparing cost estimates for bridge projects

Replacement Unit Costs	
Replace with Concrete	$ 170/SF
Replace with Steel	$ 200/SF
Replace with Wood	$ 150/SF
Right of way	$200,000 (avg.)
Preliminary Engineering and Environmental Studies	15% x (Bridge + Approach)
Approach Cost	$600,000 (avg.)
Construction Management Cost	15% x (Bridge + Approach)
Total	(Bridge Cost) + (Approach Cost) + (ROW Cost) + (Prelim Eng & Env) + (Construction Mgmt)
Rehabilitation Unit Costs	
Estimate	$120/sf
Approaches	$ 30,000
Preliminary Engineering and Environmental Studies	Larger of (15% x Bridge or $30,000)
Construction Management Cost	$ 30,000
Total	(Bridge) + (Approach) + (Prelim Eng & Env.) + (Const Mgmt)

Figure C-1 compares the existing storm drain mileage/urban mile of Ventura County against all counties in California. The data is limited to counties where storm drain data was available in the statewide database. This again supports the observation of significant gaps in the storm drain network which need to be addressed.

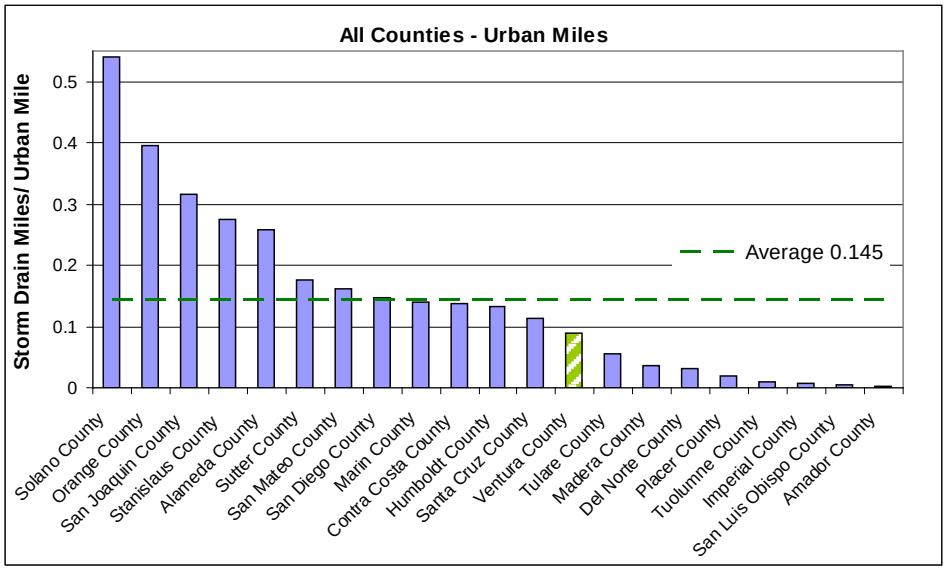


Figure C-1. Storm drain per urban mile for all of counties in California[14]

Figure C-2 shows the replacement cost per mile of storm drain for rural counties in California. Based on storm drain replacement cost for rural counties reported in the statewide database, the estimated value for replacing a mile of storm drain in Ventura county is approximately $0.75 M.

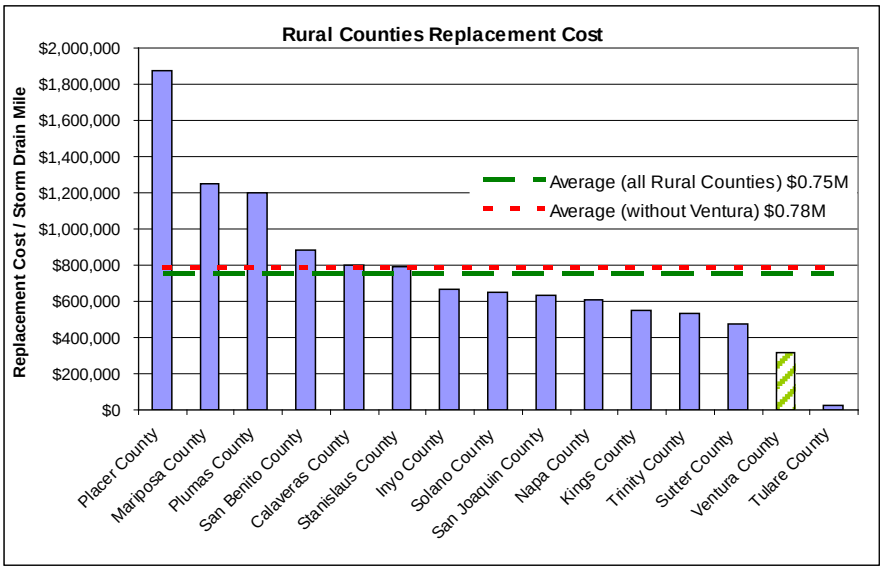


Figure C-2. Storm drain replacement cost per mile in rural counties of California[14]

[14] California Statewide Local Streets and Roads Needs Assessment, 2009, Final Report, http://dpw.lacounty.gov/gmed/slsr2/reports/2010/finalreport.pdf