San Luis Obispo County
Flood Control and
Water Conservation District

December 2003

San Miguel Drainage and Flood Control Study

final report

RMC
Raines, Melton & Carella, Inc.
Consulting Engineers/Project Managers

In Association with:

Essex Environmental & Questa Engineering Corp

San Luis Obispo County
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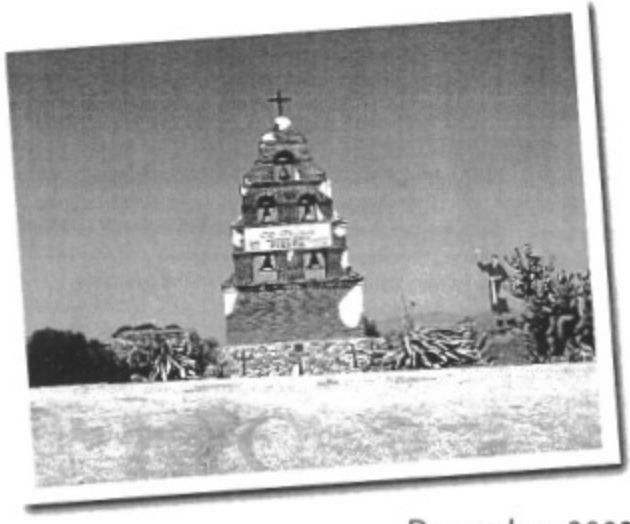
Water Conservation District



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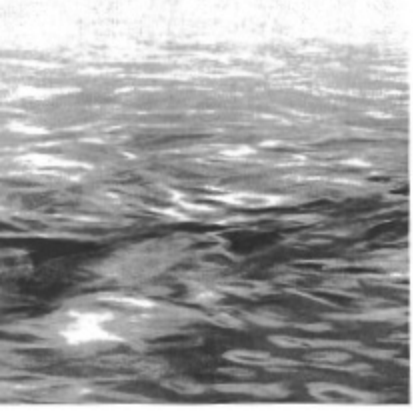

EXECUTIVE SUMMARY

This report is a summary of findings, conclusions and recommendations of the Drainage and Flood Control Study conducted for the Community of San Miguel. This report was prepared under the direction of the County of San Luis Obispo Public Works Department.

In response to questions raised by several citizens who experienced flood damage to their homes and businesses during the unusually heavy rainfall period of March 2001, the County Board of Supervisors approved funding for drainage and flood control studies for the communities of Cambria, Cayucos, Nipomo, Oceano, San Miguel, and Santa Margarita. The goals of the studies were intended to quantify the extent of drainage and flooding problems of each of these communities, to generate recommendations for solutions for the drainage problems, to identify environmental permitting requirements, to provide planning level cost estimates, and to outline a plan for funding and implementation of the proposed solutions. This study was funded through the General Flood Control District Budget.

Overview of Responsibility

The responsibilities for drainage are administered through the San Luis Obispo County Flood Control and Water Conservation District (District). The District is the designated County agency responsible for managing, planning, and maintaining drainage and flood control facilities in unincorporated public areas where no other agency has assumed an active role in such activities. The District has a regional role in the County and can work with individual cities or communities when requested. The District uses its general fund to identify water related issues, to determine solutions to problems and to help local areas implement recommended solutions. The District is not, however, responsible for paying for community-specific mitigation improvements. The specific property owners that benefit from these solutions must agree to pay for the construction and future maintenance of them. This policy (Resolution 68-223) was formally established by the Board of Supervisors in 1968 because there is not sufficient funding available for the District to fund construction and operation of facilities. This policy was reviewed and reconfirmed in April 2001. This approach provides the best leveraging of funds that are available.

The District is restricted in the way it can fund needed projects or increase revenues for existing operations. It is generally limited to an assessment district procedure for obtaining financing for the construction of new projects. Due to the changes enacted with the passage of Proposition 218, the District must now have all new benefit assessments and increases to existing benefit assessments for maintenance and operations approved through an election of affected property owners.

San Miguel Community Service District

The San Miguel CSD board of directors was identified by the County Board of Supervisors to serve as the community representative for the duration of the study. It is recommended that the CSD continue as the representative and assume the role as lead agency for implementing any proposed drainage projects. The San Miguel CSD charter lacks the provision for providing drainage services. The first step in establishing the CSD as the lead agency is to amend the charter, through an election, to include drainage services.

Existing Drainage Problems

The community of San Miguel lacks a formal drainage system. Local runoff generally follows the gentle northeasterly slope of the community and either flows to the Salinas River or infiltrates into the historic flood plain. Low spots or depressions cause frequent ponding and shallow flooding at several locations. Localized flooding is particularly extensive along Mission Street and N Street between 11th and 14th Streets, and north of 14th Street between Mission and N Streets. Caltrans culverts convey stormwater onto road surfaces of 10th, 12th, 14th and 16th Streets from the undeveloped area and possibly developed portions of Highway 101.

The primary cause of flooding in San Miguel is due to the absence of a continuous positive slope and drainage conveyance path from L Street to the Salinas River. The railroad serves as a barrier to storm runoff flowing from west of Mission Street to the Salinas River. Also, the absence of continuous curb and gutter system has lead to the concentration of street runoff in areas that do not have curbs or gutters and generally represent local low spots within a neighborhood block.

The most serious flooding in the community takes place along the western side of the railroad since runoff from residential neighborhoods collects in this area.

The overall drainage issues identified in San Miguel include:

- Ponding of storm water west of the Union Pacific Railroad tracks, and the subsequent flooding in the vicinity of Mission Street between 11th and 16th Streets
- Continued flooding and drainage problems in some residential areas
- Drainage from Highway 101

Proposed Projects

Storm drainage improvements should be planned and incorporated into future development plans. Conceptually, a series of collection facilities such as curbs, gutters, drop inlets, and storm drain pipelines would convey storm runoff from residential areas west of Mission Street to the Salinas River. It is possible that many of the existing roadways would have to be improved to convey runoff effectively into the proposed system.

Several projects have been developed to address the various flooding areas and issues. The alternatives have been organized by specific problem:

- Barrier created by railroad (absence of continuous positive slope)
- Residential and commercial flooding
- Drainage from Highway 101

A comprehensive project is necessary to mitigate all flooding problems in San Miguel. In planning a drainage and flood protection project, downstream improvements must be constructed prior to upstream improvements so that runoff can be managed. In San Miguel, any proposed solution must first devise a method for conveying runoff across the railroad tracks to the Salinas River.

San Miguel Community Design Plan

The San Miguel Community Design Plan (Design Plan) discusses, in general terms, locations in the community that experience flooding in public right-of-way during the rainy season. This report addresses the issues outlined in the Design Plan and also proposes recommendations for mitigating the drainage and flood problems. The projects proposed in this drainage report should be implemented concurrently or should complement any improvements proposed in the Design Plan.

Mission Street Design Plan

The County's Planning Department completed a conceptual street improvement plan for Mission Street, between 11th and 14th Street. The County's Planning Department anticipates that adequate funding is available through a grant to plan, design and construct the Mission Street enhancements between 13th and 14th Street. However, the Mission Street enhancement project does not include a storm drain along Mission Street. Therefore, the drainage projects proposed in this report also include storm drain laterals in Mission Street to properly collect and convey storm runoff. The projects proposed in this drainage plan will complement the

Mission Street Design Plan and will provide a complete system for conveying storm runoff from Mission Street to the Salinas River.

Future Developments

Incorporating future developments in the solution to drainage problems is a key component of this drainage plan. This study examined existing and future drainage from proposed developments or developable areas. The potential for increased residential and commercial development provides an opportunity to increase capacity of new drainage facilities to serve existing customers. The County's Planning Department should capitalize on these opportunities, work with the District and developers to plan projects that benefit the entire community.

If a developer constructed a storm drain facility that was sized larger than required to serve their particular project, it would be possible to reimburse the developer, or give "credit" under an impact fee system, for the excess capacity. Alternatively, the lead agency could establish a "buy-in" fee to collect revenue from properties that contribute runoff to the system, but won't be connected to the drainage system until a future date. These upstream properties would be financially responsible for the additional capacity and the lead agency would develop a reimbursement agreement.

Underground Storm Drain System

Prior to designing and constructing drainage infrastructure in the community, the underlying problem of how to convey flow to the Salinas River must be resolved. It is necessary to construct adequate downstream drainage facilities first. Storm drainage infrastructure can then be built upstream to feed runoff to the downstream components. This drainage plan assumes that infrastructure to collect and convey upstream runoff from the residential area of San Miguel will be constructed after the downstream facilities are constructed.

A conventional underground storm drain system for the community would collect and convey runoff for a majority of the community, and would resolve the issue of positive drainage from Mission Street to the Salinas River. Runoff that currently ponds and causes shallow flooding along Mission Street and the railroad would be collected at various drop inlets on Mission Street. Runoff would then be conveyed in the storm drain pipelines under the railroad, eventually discharging to the Salinas River. As shown in Figure 5 of Appendix A, a series of drop inlets would also collect runoff from developed areas east of the railroad tracks and convey it to the Salinas River.

The system would generally be laid out as a series of three new drainage lines and an improved drainage ditch. Storm drain laterals would be constructed in Mission Street to collect and convey runoff to the three new drainage lines. These pipelines could be connected to existing drainage facilities and would be designed to accommodate future growth of the community. These drainage facilities would work in conjunction with the proposed Mission Street Design Plan discussed above.

Mitigate Residential Flooding

The final component of a comprehensive storm drainage and flood control project would be mitigation of flooding problems in residential neighborhoods of San Miguel. The absence of a continuous curb and gutter system has lead to the concentration of street runoff at local low spots within a neighborhood block. Following construction of the storm drains, a series of curbs and gutters would be constructed to collect and convey runoff away from the residential neighborhoods, to the storm drains, eventually discharging to the Salinas River.

Project Phasing

The phasing of implementation depends primarily on 1) the needs of the community, 2) available funding, and 3) the implementation of the Mission Street Design Plan and the Community Design Plan. Not all underground pipeline alignments, or all curbs and gutters need to be constructed simultaneously. If the Mission Street Design

Plan is implemented, then a drainage system is necessary to convey flow from Mission Street to the Salinas River. The logical first step would be to construct the 36 and 48-inch reinforced concrete pipe in River Road along with the Mission Street storm drain laterals. Curbs and gutters between 12th and 16th Street could then be constructed since a storm drain to convey runoff would be available. This element of the overall project would serve nearly 50 percent of the community. As subsequent storm drains in 11th and 16th Street came on line, additional curbs and gutters in the remaining neighborhoods could then be constructed.

As the community develops and the Mission Street Design Plan is implemented, these facilities should be planned, designed and constructed. In order of priority, the projects should be planned as follows:

1. River Road Pipeline. This is the main drainage line to accept runoff from the proposed redevelopment of the Mission Street Design Plan and thus is a logical choice to implement first. A storm drain lateral in Mission Street is also included with the River Road pipeline project. The recommendations in this report assume that the Mission Street Design Plan is implemented by the County's Planning Department.
2. 16th Street Pipeline. This drainage line would provide the conveyance of runoff for proposed development in the northern portion of the community and would intercept a portion of the runoff entering the Mission Street central district. The community would benefit if developers constructed new storm drain facilities with supplemental capacity to serve existing and future upstream residents.
3. 11th Street Pipeline. This line drains the southern portion of the community and accepts a certain amount of runoff from Highway 101.
4. 12th Street Drainage Ditch. This is the lowest priority because the ditch would drain a small watershed and the area should remain fairly undeveloped based on its current Residential Suburban land use designation.

Curb and Gutter Discussion

The most severe flooding in San Miguel occurs at River Road, between Mission Street and the Railroad. A traditional storm drain system is the most feasible alternative for mitigating this flooding. A few residents reported flooding of homes, but in general, few responses were received for the residential neighborhoods and the types of flooding reported were minor, nuisance problems. The installation of curbs and gutters should correct the majority of the residential area flooding problems. However, the reason the lead agency or community may choose to defer or eliminate the curb and gutter element in all projects is that the cost for building a continuous system may exceed the benefits gained by each property owner. The few responses received indicate that, in general, drainage issues on residential properties are not perceived as major problems. Mitigating the major flooding problem between Mission Street and the railroad may be sufficient for the community.

Project Costs

These projects are proposed for mitigating flooding in the residential neighborhoods, preventing flooding between Mission Street and the railroad, and providing a terminal disposal point for the collected runoff. It should be noted that the proposed improvements would address flooding created by a 10-year or less rain event. The benefit is that the most frequent problems experienced by residences on an annual basis would be corrected. Flooding problems and/or community damage could be expected for events larger than a 10-year event. However, proposing projects that mitigate flooding caused by larger rain events was determined infeasible due to the intensity of existing development and excessive cost for protection from less frequent but larger rain events. The cost estimates for the four project alignments are summarized in Table ES-1. Detailed cost estimates of all the alternatives are provided in Chapter 3.

Table ES-1: Summary of Alternatives

PROJECT	PROBLEM AREA	PROPOSED MITIGATION	STORM DRAIN/DITCH COST [1]	CURB AND GUTTER COST [1]	APPROXIMATE IMPLEMENTATION TIMEFRAME [2]
River Road	Between Mission Street and railroad: 11th to 16th Street	Construct 36 and 48-inch storm drain to convey runoff to Salinas River. Laterals in Mission Street.	$1,520,000	Zone D [3] -$360,000 Zone F-$176,000	5 to 6 years
16th Street	Between Mission Street and railroad: 16th Street and north	Construct 30 and 48-inch storm drain to convey runoff to Salinas River. Laterals in Mission Street.	$1,477,000	Zone B-$64,000 Zone E-$127,000	4 to 5 years
11th Street	West of Mission and South of 11th Street	Construct 36-inch storm drain to convey runoff to Salinas River. Laterals in Mission Street.	$1,252,000	Zone F-$88,000 Zone H-$294,000	4 to 5 years
12th Street	East of N Street along 12th Street	Construct drainage ditch to convey runoff to Salinas River	$303,000	-	3 to 3.5 years

1. ENR CCI for Los Angeles (February 2003) = 7,566. Includes 20% for Engineering and Design, 40% for Administrative and Environmental, and a 20% Contingency. County Overhead & Support Costs for Construction Project Planning. Use 80% cumulative markup on construction costs for Non-Coastal Zone Projects. Percentages provided by County (Typical to all estimates in this report).

2 See Chapter 6 milestone durations

3 Delineation of drainage zones shown in Figure 4 of Appendix A.

Implementation Strategy

The most effective approach to improving drainage and flooding problems in each community is to identify the problems, develop solutions, and then create a local entity to implement the solutions. The role of the District is to assist the community in determining the improvements necessary to reduce flooding, and then to assist them in implementing programs to improve protection.

The District will continue to use its general funds only to provide programming and project initiation services so that communities can better understand the drainage problems they are facing, and determine how those problems should be solved. The proposed projects for San Miguel totaled approximately $5.7 million. If the lead agency in San Miguel established a funding source, approximately $400,000 per year, which equates to approximately $800 per parcel per year, would have to be generated by the community in order to build all the projects and pay off a municipal bond[1].

[1] Assumes a municipal bond rate of 5 percent, paid off over a period of 25 years. Also assumes that approximately 500 parcels in San Miguel would be assessed to pay for the improvements.

It is recommended that the San Miguel CSD serve as the lead agency and manage the proposed projects. The San Miguel CSD does not currently possess drainage service authority, therefore, their charter would need to be amended by voter approval. The District could provide limited staff assistance to the San Miguel CSD in implementing the drainage facility projects, but primary responsibility would reside with the CSD.

IMPLEMENTATION STEPS

The following implementation steps, in general, would be followed for the underground, curb and gutter projects. It is assumed that the San Miguel CSD would serve as the lead agency and assume control of the project at completion.

- Fund and complete a Basis of Design Report[2] within 12 months of start
- Conduct a benefit assessment proceeding for the properties that benefit from the improvements
- Initiate coordination with Caltrans regarding a cooperative agreement for drainage improvements related to Highway 101 runoff
- Design project, prepare environmental documents and permits
- Apply for CDBG funds
- Advertise for construction
- Construct project

SCHEDULE FOR IMPROVEMENTS

The phasing of storm drain projects would depend on community consensus, available funding, development of residential housing, the implementation of the Mission Street Design Plan and the Community Design Plan. Not all storm drains, curbs or gutters need to be constructed simultaneously. Since the development plans for San Miguel may not reach full build out for the next 20 years, the study adopted a broad approach to outline plans and schedules for implementing the projects.

The estimated duration for conducting the tasks outlined in the implementation steps could last approximately three to six years, depending on the project, environmental permitting requirements, and establishment of a lead agency. Chapter 6, "Implementation Strategy" includes more detail regarding task durations.

[2] The Basis of Design Report would include a description of the existing problem, proposed alternatives, recommended project, preliminary alignments, potential environmental impacts, and cost estimates.

ACKNOWLEDGEMENT

The San Luis Obispo County Flood Control and Water Conservation District, Community of San Miguel Drainage and Flood Control Study 2003 represents a collaborative effort between San Luis Obispo County, the Community of San Miguel, Raines, Melton & Carella, Inc., Questa Engineering Corporation and Essex Environmental. We would like to acknowledge and thank the following key personnel from the San Miguel Community Services District and the County whose invaluable knowledge, experience, and contributions were instrumental in the preparation of this report.

Gene Machado – Director San Miguel Community Services District
Noel King – Public Works Director
Glen Priddy – Deputy Public Works Director-Engineering Services
George Gibson – Design Engineer Public Works
Dean Benedix – Project Manager Public Works
Paavo Ogren – Deputy Public Works Director-Administration

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ABBREVIATIONS

CDFG	California Department of Fish and Game
Caltrans	California Department of Transportation
CCI	Construction Cost Index
CCRWQCB	Central Coast Regional Water Quality Control Board
CDBG	Community Development Block Grants
cfs	Cubic Feet per Second
Corps	U.S. Army Corps of Engineers
County	San Luis Obispo County
CSD	Community Service District
District	San Luis Obispo County Flood Control and Water Conservation District
FEMA	Federal Emergency Management Agency
FH	Flood Hazard
FIRM	Flood Insurance Rate Maps
FMP	Floodplain Management Plan
ft	feet
LAFCo	Local Agency Formation Commission
LF	linear feet
NPDES	National Pollution Discharge Elimination System
OES	Office of Emergency Services
RCP	Reinforced Concrete Pipe
SMCSD	San Miguel Community Services District
SLOCAPCD	San Luis Obispo County Air Pollution Control District
TM	Technical Memorandum
UPRR	Union Pacific Railroad

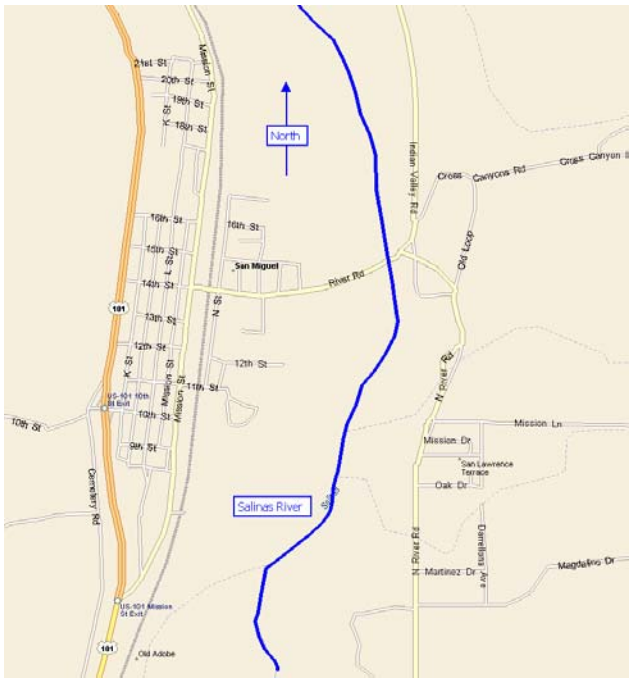
CHAPTER 1 INTRODUCTION

Chapter Synopsis: This chapter presents the purpose, objectives, and scope for the Drainage and Flood Control Study, followed by the methodology used to achieve those purposes and objectives.

The community of San Miguel (San Miguel) is located in northern San Luis Obispo County, approximately 37 miles north of the City of San Luis Obispo. The community is nestled in the upper Salinas River Valley on the western bank of the Salinas River. Figure 1-1 shows the location of San Miguel with respect to surrounding communities. Approximately 1,500 residents live in San Miguel.

Figure 1-1: Community of San Miguel Location[3]

Figure 1-2: Community of San Miguel Detail Layout[2]



As shown in Figure 1-2, San Miguel is transected by several parallel features that define its boundaries. On the west, the community is defined by Highway 101 and the steep hillside along the highway's western edge. The Salinas River defines San Miguel's symbolic eastern boundary, although the community's Urban Reserve Line extends east of the river to encompass the San Lawrence Terrace development. The Union Pacific railroad tracks run through the middle of town.

Topographically, San Miguel consists of two terraces connected by a steep slope. The upper terrace extends from Highway 101 to east of the alley between K and L Streets. The lower terrace extends from L Street to the Salinas River. The upper terrace has fewer surface drainage problems than other parts of town. Several locations within the lower terrace experience seasonal ponding of stormwater.

San Miguel is primarily residential housing with some commercial buildings located principally on Mission Street. The older, more fully developed part of town lies between the highway and the railroad property. This part of San Miguel is laid out as a grid of blocks measuring 400 feet in the north/south direction and 320 feet in the east/west direction. A north/south alley divides each block into 150 foot deep parcels. East of the railroad,

[3] Map is excerpted from Microsoft Streets and Trips

only the land fronting on N Street, from 11th to 15th Street was originally subdivided in this manner. The remainder of the land was subdivided without a formal network of streets and lots.

11th Street and 14th Street (River Road) are the only two existing streets that cross the railroad tracks. River Road leads to the bridge across the Salinas River and the agricultural areas to the east. The San Miguel CSD has advised that there is a utility easement crossing the railroad tracks along the 16th Street alignment.

1.1 Project Understanding

The community of San Miguel lacks a formal drainage system in the older areas of development. Local runoff generally follows the gentle northeasterly slope of the community and either flows into the Salinas River or infiltrates on the historic flood plain. Low spots or depressions cause frequent ponding and shallow flooding at several locations. Localized flooding is particularly extensive along Mission Street and N Street between 11th and 14th Streets, and north of 14th Street between Mission and N Streets. Caltrans culverts convey stormwater onto road surfaces of 10th, 12th, 14th and 16th Streets from the undeveloped area and possibly developed portions of Highway 101.

The primary cause of flooding in San Miguel is due to the absence of a continuous positive slope and drainage conveyance path from L Street to the Salinas River. The railroad serves as a barrier to storm runoff flowing from west of Mission Street to the Salinas River. Also, the absence of continuous curb and gutter system has lead to the concentration of street runoff in areas that do not have curbs or gutters and generally represent local low spots within a neighborhood block.

In general, the community needs to develop an overall plan to collect and convey runoff in an organized fashion to the Salinas River. Specifically, a system of curbs, gutters, drop-inlets, constructed ditches; interim/permanent/ retention/detention basins and underground storm drainage pipes are potential alternatives to manage runoff.

1.2 Objectives and Scope

This report has been prepared for the San Luis Obispo County Flood Control and Water Conservation District on behalf of the Community of San Miguel. The main objective of the Drainage and Flood Control Study is to identify and present improvements needed to minimize or eliminate localized flooding problems, and to convey the collected runoff from the developed areas to a disposal point. It serves as a guide for long range planning for improvements to ensure that the community has reliable drainage infrastructure in the future. This report documents the existing conditions, examines potential improvements, identifies environmental permitting requirements, and recommends a funding strategy to pay for the improvements.

1.3 Methodology

In order to accomplish the goals of the Study, the methodology shown in Figure 1 of Appendix A was used. As shown in the figure, community involvement in the study was imperative to gaining a local understanding of the flooding problems. Each community was represented by an Advisory Committee and this Advisory Committee also identified a sub-committee to work directly with the study team throughout the duration of the project. The sub-committee also reviewed technical documents and provided comments to the study team. The San Miguel Community Service District Board of Directors represented the community of San Miguel. Director Machado worked directly with the study team for the duration of the project. The study team requested input and endorsement from the Advisory Committee at the following milestones:

- Initiation of Study and Community Questionnaire
- Approach to Conducting Engineering Analysis
- Proposed Alternatives for Mitigating Flooding
- Review of Draft Report

- Endorsement of Final Report

1.3.1 COMMUNITY INVOLVEMENT

In order to gain the local knowledge of existing flooding problems, a questionnaire was mailed to the residences of San Miguel. The questionnaire requested information on existing flooding problems, location of flooding, frequency of occurrence, and observed causes. A summary of the responses and comments received is included in Appendix C. In order to protect the privacy of the respondents, personal information (names and phone numbers) is not included in the summary. A sample of the questionnaire is also included in Appendix C.

1.4 Existing Information

When available, existing information was used to assist in the engineering and environmental analysis. A list of references is provided in this report. Previous to this study, no engineering analysis quantifying existing drainage and flooding problems had been conducted for San Miguel. However, resident observations and documentation were available and provided valuable information on the location and severity of historic flooding problems.

A number of responses were received from residents outside the urban area of San Miguel. These "remote" areas were not included in the study, nor was the San Lawrence Terrace area, due to the limited funding available for the study. This study focused on the most problematic areas of San Miguel, specifically the downtown area on Mission Street. Also, the nature of responses received for outside the urban area tended to be property and maintenance specific. These remote area responses were conveyed to the County Roads Maintenance Division of Public Works for review and appropriate action. San Lawrence Terrace was excluded from the study because no citizens reported problems in this area of town, and the San Miguel Community Service District did not identify significant problems or issues in the terrace.

1.5 Report Content

The structure of the Drainage and Flood Control Study is outlined below.

- CHAPTER 1 – INTRODUCTION (this introduction)
- CHAPTER 2 – COUNTY POLICIES, (presents an overview of the drainage and flood control responsibilities in the County of San Luis Obispo).
- CHAPTER 3 – ENGINEERING ANALYSIS AND ALTERNATIVES DEVELOPMENT, (discusses the existing drainage and flooding problems in San Miguel and presents alternatives that will mitigate the problems).
- CHAPTER 4 – ENVIRONMENTAL FEASIBILITY ANALYSIS, (discusses the environmental permitting and regulatory requirements for the proposed alternatives).
- CHAPTER 5 – FUNDING ALTERNATIVES, (provides a summary of funding options, including criteria for qualifying projects, available funds, and cost sharing formulas).
- CHAPTER 6 – IMPLEMENTATION STRATEGY, (This chapter consists of an implementation plan of the recommended improvements developed to reduce nuisance flooding and provide flood protection).

In addition to the six chapters, there are also seven appendices attached to the end of the report. The appendices are:

APPENDIX A – Figures

APPENDIX B – Photographs

APPENDIX C – Community Questionnaire and Responses

APPENDIX D – Resolution Establishing Policy

APPENDIX E – Engineering Analysis Technical Memorandum

APPENDIX F – Environmental Analysis Technical Memorandum

APPENDIX G – Funding Assistance Technical Memorandum

APPENDIX H – Response to Comments

CHAPTER 2 COUNTY POLICIES

Chapter Synopsis: This chapter presents an overview of the drainage and flood control responsibilities in the County of San Luis Obispo, as carried out by the San Luis Obispo County Flood Control and Water Conservation District.

2.1 Overview of Responsibilities

The drainage and flood control responsibilities of the County are determined by State and County statutes and by County policy. The responsibilities for drainage are administered through the Road Division of the County Public Works Department and the San Luis Obispo County Flood Control and Water Conservation District (District). The District is the designated County agency responsible for managing, planning, and maintaining drainage and flood control facilities in unincorporated public areas where no other agency has assumed an active role in such activities. The District has a regional role in the County and can work with individual cities or communities when requested. The sections below describe the limits of the jurisdiction of road maintenance and improvement, Road Fund administration, and how the District is administered to best leverage its powers by creating Zones of Benefit to administer specific projects.

2.1.1 FLOOD CONTROL AND WATER CONSERVATION DISTRICT

2.1.1.1 History

The San Luis Obispo County Flood Control and Water Conservation District was established in 1945. The powers of the District include flood control, water supply, water conservation, water quality protection and the ability to study all aspects of water resources. The District also has power to form zones of benefit within its boundary to implement water resource projects.

The District is a special district that is governed by the County Board of Supervisors. The boundaries of the District are the same as the County boundaries, and the staff of the District is the same as the staff of the County. The District also includes all of the territory within the County's seven incorporated cities. The District budget is separate and distinct from all other County budgets. It has its own funding sources, and its own expenditure plan.

2.1.1.2 Policy Direction: Resolution Number 68-223

The District is available to help communities deal with flood waters and to conserve, study and develop water supplies. The District uses its general fund to identify water related issues, to determine solutions to those problems and to help those local areas implement recommended solutions. The District is not, however, responsible for paying for community-specific mitigation improvements. The specific property owners that benefit from these solutions must agree to pay for the construction and future maintenance of them. This policy (Resolution 68-223) was formally established by the Board of Supervisors in 1968, and was reviewed and reconfirmed in April 2001. The documentation of the policy is included in Appendix D of this report.

The policy was adopted because there is not sufficient funding available for the District to fund construction and operation of facilities. This approach provides the best leveraging of funds that are available on a county-wide basis.

The resolution also includes a provision for reimbursement to a developer (and successor in interest), for constructing drainage facilities with excess capacity to accommodate runoff from adjacent properties. The normal period for reimbursement would be from five to ten years, and in no event would it exceed 20 years. Developer participation in recommended drainage projects is a central theme to this study.

2.1.1.3 Funding Sources

The primary funding source for the District, which is the entire County, is a pre-Proposition 13 general property tax allocation, which provides approximately $550,000 per year in revenue. In addition, the District receives about $130,000 per year in interest income from current resources. Reserves from the County's General Fund, which is separate from District fund, are normally not used for the construction of projects protecting private property, unless there is a significant general or roadway benefit.

2.1.1.4 Countywide Activities

The District provides funding for flood control programming and planning of localized drainage issues.

2.1.2 COUNTY STANDARDS FOR CONTROL OF DRAINAGE

The County's planning department establishes the land use policies and drainage ordinances for the County (the District has no land use ordinances). Section 22.52.080 et. seq., of the San Luis Obispo County Code contains the County's land use ordinance standards for the control of drainage and drainage facilities. These requirements apply to all projects and activities required to have land use permit approval. These standards aim to minimize the harmful effects of storm water runoff and to protect neighboring and downstream properties from drainage problems resulting from new development. They include:

- Requirements pertaining to the drainage and construction of drainage systems
- Requirements pertaining to the maintenance of offsite natural drainage patterns
- Restrictions on development in areas subject to flood hazards

Conditions of development in flood hazard areas must, at a minimum, enforce the current Federal flood plain management regulations as defined in the National Flood Insurance Program. Projects that may be subject to or cause flood hazards are required to prepare a drainage plan, subject to approval by the County Engineer.

In addition, the County's land use ordinances contain development standards for areas with the Flood Hazard (FH) designation. The standards state that drainage plans for development in FH areas must include a normal depth analysis that determines whether the proposed development is in the floodway or the flood fringe. In addition, development in FH areas would be subject to construction practices that would not limit floodway capacity or increase flood heights above an allowable limit.

2.1.3 THE ROAD FUND

The County provides some limited drainage improvements as a function of its road maintenance responsibilities. In San Miguel, the County also maintains the alleys, the only community in the County for which this action is carried out. The Road Fund is a separate, distinct legal account and budget, from the District. It has numerous State statutes (primarily the Streets and Highways Code) that dictate how Road Fund monies may legally be expended. The Road Fund program operates the County Maintained Road System and is funded through a combination of restricted revenue sources that are primarily derived through taxes on gasoline that are apportioned to cities and counties by the State, as well as contributions from the County General Fund. These funding sources can only be spent on solving problems that directly relate to County maintained roads.

As a function of operating the road system, the drainage issues related to the road system are addressed when such drainage work protects the County maintained road system in a cost beneficial way, or is directly related to County road improvement projects and is necessary to prevent property damage. This includes directing the flow of streams across the roads through culverts and bridges.

A specific historic drainage project that has been completed in San Miguel through the Road Fund includes:

- Repaved a section of roadway and installed berms on 16th and N Street to control road drainage.

2.1.4 Other Agencies with Drainage Responsibilities

2.1.4.1 Community Service Districts

Community Service Districts (CSD's) are locally controlled special districts that can also provide drainage and flood control services. However, the San Miguel CSD cannot provide drainage services without a change to its charter.

2.1.4.2 County Service Areas

County Service Areas (CSA's) can focus the powers of the County to provide specific services to specific areas, including drainage and flood control services. These special districts are governed by the County Board of Supervisors and receive their funding through the collection of voter approved service charges or benefit assessments from the residents or property owners of the specific area served. LAFCo discourages the creation of CSA's within the boundaries of a CSD when the CSD is capable of performing the same service. A new CSA would also create extra administrative costs to operate. Therefore, no CSA currently provides drainage service in San Miguel.

2.1.4.3 Cities

Individual cities within the County exercise control over drainage issues within their city limits.

2.1.4.4 U.S. Corps of Engineers

At the Federal level, the U.S. Army Corps of Engineers (Corps) provides flood protection throughout the nation, however, the Corps has done very little work in San Luis Obispo County and operates no facilities here.

2.1.4.5 California Department of Water Resources

The Sate of California also administers some flood control and drainage programs via the State Department of Water Resources' (DWR) flood control division. DWR has little presence in the County, and mainly gets involved in a consulting role during flood emergencies.

2.1.4.6 Caltrans

The California Department of Transportation (Caltrans) operates drainage facilities that are associated with the State Highway System. Runoff from Highway 101 Caltrans right of way discharges onto San Miguel streets at several locations.

2.2 Flood Control Zone

The District has the power to form Zones of Benefit to implement and operate facilities. Each Zone must have its own funding source. There is no currently active operational project or Zone of Benefit operating under the District in San Miguel.

2.3 Funding Issues

The District is restricted in the way it can fund needed projects or increase revenues for existing operations. It is generally limited to a zone of benefit or an assessment district procedure for obtaining financing for the construction of new projects.

Due to the changes enacted with the passage of Proposition 218, the District must now also have all new benefit assessments, and increases to existing benefit assessments for maintenance and operations, approved through an election of affected property owners.

The District provides a means of funding studies that define problems and recommend technical solutions to those problems. The critical next steps of constructing and maintaining drainage facilities can normally only be completed with local benefiting property owners being willing to vote to assess themselves for these costs.

Chapter 5 discusses in greater detail the alternative methods for potentially funding the construction of community-specific flood control and drainage projects.

2.4 Maintenance Responsibilities

Survey respondents reported that many of the existing drainage channels are filled with sediment and vegetation. Field investigations indicate that some of the drainage ditches were partially filled with sediment and excessive vegetal growth. Under maintained facilities reduce their design capacity and inhibit their ability to convey runoff. However, in many instances it was difficult determining who is responsible for maintaining the facilities. If a property owner does not maintain drainage facilities such as swales located on private property, then these structures will go unattended because the District is not responsible for maintaining facilities on private property or on property within the jurisdiction of other public agencies (e.g. Caltrans and Highway 1).

CHAPTER 3 ENGINEERING ANALYSIS AND ALTERNATIVES DEVELOPMENT

Chapter Synopsis: This chapter discusses the existing drainage and flooding problems in San Miguel and presents alternatives that can mitigate the problems. The chapter also presents the estimated cost for planning, designing and constructing the proposed capital projects. An engineering technical memorandum was prepared for this study and is included in Appendix E. The technical memorandum provides greater detail on the engineering methodology, analysis and alternatives. Some items in this chapter were modified since the completion of the technical memorandum.

3.1 Overview of Proposed Project

The community needs to develop an overall plan to collect and convey runoff in an organized fashion to the Salinas River. Specifically, a system of curbs, gutters, drop-inlets, constructed ditches and underground storm drain pipes are needed to properly convey runoff. The comprehensive drainage and flood control project would first determine an effective approach for 1) conveying the runoff across the railroad tracks, or 2) managing the runoff west of the tracks. The second phase of a comprehensive project would address shallow flooding of residential and commercial areas. This order of implementation is necessary because a terminal disposal or management facility must first be constructed prior to conveying runoff away from residential areas.

As the community develops and improvements to Mission Street are implemented, these facilities should be planned, designed and constructed. In order of priority, the projects should be planned as follows:

1. River Road Pipeline. This is the main drainage line to accept runoff from the proposed redevelopment of the Mission Street Design Plan and thus is a logical choice to implement first.
2. 16th Street Pipeline. This drainage line would provide the conveyance of runoff for proposed development in the northern portion of the community and would intercept a portion of the runoff entering the Mission Street central district.
3. 11th Street Pipeline. This line drains the southern portion of the community and accepts a certain amount of runoff from Highway 101.
4. 12th Street Drainage Ditch. This is the lowest priority because the ditch would drain a small watershed and the area should remain fairly undeveloped based on its current Residential Suburban land use designation.

The final piece of a comprehensive and effective drainage infrastructure project would be the construction of a continuous curb and gutter system, along with a storm drain collection system. Curbs and gutters should be planned and designed only after the storm drain pipes are constructed.

The County's Planning Department should coordinate with future residential and commercial developments to include these proposed storm drain improvements into the developments plans. An opportunity exists in San Miguel to provide developers with incentives for increasing storm drain capacities to serve existing residents. Provisions for reimbursing developers are discussed in this chapter and in Chapter 6.

The remaining chapter discusses existing problems, provides greater detail on the alternatives, and breaks down cost estimates.

3.2 Engineering Methodology

The purpose of the engineering analysis was to examine the existing drainage conditions of San Miguel, identify problematic areas and issues, prioritize and categorize the problems. The engineering analysis also developed

conceptual solutions to the identified drainage and flood control problems. This chapter includes a description of existing drainage conditions, a discussion of the methodology used to evaluate drainage problems, and the identification of a series of projects to mitigate the drainage problems.

The approach for studying San Miguel was to divide the community into drainage basins. The study team utilized detailed topographic maps prepared in 2002 to delineate drainage sub-basins. The known problem areas were assessed using a combination of resident accounts and field investigations. Problems in each sub-basin were prioritized from severe to moderate.

Initial concepts for mitigating existing flooding problems included the development of a formal drainage system. A continuous curb and gutter system would be installed in the residential and commercial zones to convey storm runoff to several drop inlets and storm drains near Mission Street. The storm drain pipelines would convey runoff from Mission Street to the Salinas River. Residents located east of the railroad tracks would also require a curb and gutter system to route runoff to the proposed underground drainage system. Also investigated was the use of localized infiltration and/or detention basins to prevent localized flooding.

3.3 Existing Drainage and Flooding Problems

There are two primary causes to the drainage problems in San Miguel; 1) the physical barrier created by the railroad tracks which causes water to pond along Mission Street, and 2) segmented curbs and gutters that concentrate street runoff onto local low spots within residential areas of the community.

Drainage problems within the community were identified by:

- Reviewing community responses to the questionnaire
- Conducting community outreach discussions with local residents and County staff
- Conducting field mapping of curbs, gutters, and infiltration basins
- Reviewing Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) for the San Miguel

3.3.1 Regional Hydrology

San Miguel is located in the Mahoney Canyon subbasin of the greater Salinas River watershed. The Mahoney Canyon subbasin drains approximately 10 square miles. The subbasin is comprised of a three-mile segment of the Salinas River and at least four of its tributaries. The subbasin is flanked to the east and west by mountain ridges. The Salinas River flows along the eastern boundary of San Miguel, carrying runoff from the community north to Monterey County.

The surface geology in San Miguel is made up mostly of alluvium deposited by the Salinas River. The soils deposited in San Miguel exhibit variable permeability characteristics, from moderately slow to moderately rapid. This is important because if the permeability is high, then storm detention facilities are more feasible as flood control alternatives since water can move easily through the porous medium and percolate into the groundwater. If permeability is low, then storm water will tend to linger in a detention facility for a longer duration.

3.3.2 Overview of San Miguel Drainage Issues

San Miguel is a community based on a subdivision of land that created buildable lots without the benefits of infrastructure improvements. In most urban areas, increased runoff from the increased impervious surfaces, such as roofs, driveways and roads, is collected and disposed of by various types of flood control facilities. In San Miguel, however, flood control facilities are limited because in the early stages of urbanization, storm water conveyance and flood control infrastructure were not incorporated into the community. During this early period, curb, gutter and drainage improvements were not required for development, thus no upfront drainage

infrastructure cost was borne by the property owners. With an increase in urbanization came an increase in impervious surfaces and a decrease in the capability of the underlying soil to adequately absorb urban runoff. This has resulted in several areas becoming flood prone, causing public and private property damage during storms.

The combination of inadequate drainage facilities and the physical barrier created by the railroad tracks has resulted in poor drainage and/or localized flooding around some residences, buildings, and roadways. Reported areas of localized flooding and/or drainage problems based on community questionnaires and field observations are shown in Figure 2 of Appendix A. The most serious flooding in the community takes place along the western side of the railroad since runoff collects in this area.

The general drainage problem categories identified in San Miguel include:

- Ponding of storm water west of the Union Pacific Railroad tracks, and the subsequent flooding in the vicinity of Mission Street between 11th and 16th Streets
- Continued flooding and drainage problems in some residential areas
- Drainage from Highway 101

3.3.3 FEMA Flood Hazard Zones

In addition to localized flooding and drainage problems, portions of San Miguel have been classified by the Federal Emergency Management Agency (FEMA) as being located within 100-year flood hazard zones of the Salinas River. The FEMA floodplain delineations are shown in Figure 3 of Appendix A. The reader should note that it is not the purpose of this study to evaluate or recommend solutions to the significant flooding problems in the FEMA designated zones. The flood zone is presented to show the relative context of the local drainage issue with the global flood issues concerning the Salinas River.

3.4 Drainage and Flood Control Analysis

3.4.1 Local Drainage Patterns

San Miguel was divided into eight individual drainage zones (Zones A through H) as shown in Figure 4 of Appendix A. The figure also shows the approximate location and diameter of Caltrans culverts beneath Highway 101 that discharge runoff into San Miguel. A summary of the existing drainage infrastructure and drainage patterns within each zone is presented in Table 3-1.

Table 3-1: Summary of Existing Drainage Infrastructure and Pattern

ZONE	INFRASTRUCTURE
A	Concentrated runoff from steep east-facing foothills west of the community flows to drainage infrastructure along Highway 101. Culverts beneath Highway 101 convey flows from Zone A to Zone B. Drainage problems have not been reported in Zone A. The Highway 101 corridor accounts for only minor portions of the overall watershed draining into San Miguel. The impervious surface of Highway 101 is approximately 8 percent of designated sub watershed A.
B	Zone B generally slopes gently (less than five percent slopes) to the east, towards the Salinas River. A 24-inch reinforced concrete pipe (RCP) Caltrans culvert discharges runoff from Zone A and Highway 101 onto 16th Street. During large storm events, runoff from Zone B ponds west of the railroad tracks, causing drainage problems along Mission Street from 11th Street to 16th Street.
C	Concentrated runoff from steep east-facing foothills west of the community flows to drainage infrastructure along Highway 101. Culverts beneath Highway 101 convey flows from Zone C to Zone D. Drainage problems have not been reported in Zone C. The Highway 101 corridor accounts for only minor portions of the overall watershed draining into San Miguel. The impervious surface of Highway 101 is approximately 14 percent of designated sub watershed C.
D	Zone D generally slopes gently (less than five percent slopes) to the east, towards the Salinas River. A 30-inch and 24-inch RCP Caltrans culvert discharges runoff from Zone C and Highway 101 onto 14th Street and 12th

	Street, respectively. During large storm events, runoff from Zone D ponds west of the railroad tracks, causing drainage problems along Mission Street from 11th Street to 16th Street.
E	Runoff in Zone E originates east of the railroad tracks and flows east towards the Salinas River. Runoff from Zone E is conveyed mainly within an existing storm drain in 15th Street. The storm drain conveys flow east to the Salinas River. Serious drainage problems do not currently exist in Zone E though localized ponding was noted during field visits. Future improvements to drainage infrastructure at the railroad tracks and/or additional impervious surfaces associated with future development would likely necessitate improvements to existing and the construction of future storm sewer infrastructure in Zone E. Tract 2136 (located east of Bonita Place and south of 16th Street) for the development of approximately 46 new homes was under construction during the writing of this report. This tract will construct drainage infrastructure to serve these homes only.
F	Runoff in Zone F originates east of the railroad tracks and flows east towards the Salinas River. Runoff from Zone F is conveyed mainly within roadside gutters and ditches along River Road and 12th Street. The curbs and roadside drainage ditches convey flows east to the Salinas River. Serious drainage problems do not currently exist in Zone F though localized ponding was noted during field visits. However, future improvements to drainage infrastructure at the railroad tracks and/or additional impervious surfaces generated during future development would likely necessitate improvements to existing and the construction of future storm sewer infrastructure in Zone F. A new development along 11th Street was under construction during the writing of this report. A storm drain was constructed to serve this development only.
G	Runoff in Zone G originates east of the railroad tracks and flows east towards the Salinas River. Zone G is currently undergoing residential development for the construction of approximately 150 homes. New subdivisions in this area have curbs, gutters, and drain to central drainage pipes leading to the Salinas River. For this report, it is assumed that new development in this zone will provide adequate drainage systems to convey runoff to the Salinas River. This zone will not be discussed further in the report.
H	Zone H generally slopes gently (less than five percent slopes) to the east, towards the Salinas River. A 42-inch RCP Caltrans culvert discharges runoff from the general area of the southbound off ramp and area west of Highway 101 and 10th Street. The 42-inch culvert discharges onto San Luis Obispo Road. During large storm events, runoff from Zone H ponds west of the railroad tracks, causing drainage problems along Mission Street from 11th Street to 16th Street.

3.4.2 DRAINAGE AND FLOODING ISSUES

There are four specific drainage issues in San Miguel that need to be addressed:

- Construction of segmented curbs and gutters
- Localized flooding in residential and commercial areas
- Absence of positive slope from the vicinity of L Street east to the Salinas River (physical barrier created by railroad tracks
- Drainage from Highway 101

3.4.2.1 Segmented Curbs and Gutters

San Luis Obispo County Land Use Ordinance 22.54.030 requires the installation of concrete curb, gutters, and sidewalks along the entire street frontage of the site under permit, and also along the street frontage of any adjoining lots in the same ownership as the site, for any projects in the following land use categories:

- New residential subdivisions, pursuant to Title 21 of the SLO County Code
- Residential multifamily land use category, remodeling improvements that are valued at 25 percent or greater than the current property value
- New residential multifamily categories within an urban reserve line
- All commercial and office and professional categories within an urban reserve line
- All industrial categories within an urban reserve line.

Curbs and gutters are not required on new residential single family lot construction (infill lots), residential rural and suburban categories, agricultural, open space and park & recreation land use areas within an Urban Reserve Line. Curb, gutter and/or sidewalk improvement requirements may be waived, modified or delayed as follows:

- Incompatible Grade. In the opinion of the County Engineer, the finish grades of the project site and adjoining street are incompatible for the purpose of accommodating the improvements.
- Incompatible Development. Based upon the land use designations, existing land uses in the site vicinity, and existing and projected needs for drainage and traffic control, that such improvements would be incompatible with the ultimate development of the area.
- Premature Development. 1) The proposed use of a site is an interim use, 2) the project is part of a phased development and upon completion of all phases, the entire extent of improvements will be constructed, and 3) delaying the improvements would better support the orderly development of the area.

San Miguel is very interested in continuing the construction of curbs, gutters and pedestrian sidewalks. Current County policy encourages this practice, but these facilities have caused isolated flooding problems. In the long term, a completed system of curbs and gutters will improve local drainage since the end result will be a continuous system that collects and conveys runoff in an efficient manner. However, in the short term, the inconsistent placement of curbs and gutters in San Miguel has lead to the concentration of street runoff in areas that do not have curbs or gutters and generally represent local low spots within a neighborhood block.

3.4.2.2 Flooding in Residential and Commercial Areas

Developing projects that mitigate the flooding problems experienced by the residents of San Miguel is the primary goal of this study. Figure 2 of Appendix A shows the location of flooding problems based on discussions with the San Miguel CSD board of directors and the responses received from the questionnaire mailed to residents. Localized flooding and drainage problems occur in some residential areas west of Mission Street. These problems are due to the lack of an organized curb and gutter system and the inconsistency in positive drainage towards the east. While only minimal drainage problems currently occur east of the railroad tracks, it is anticipated that these areas will experience problems as the community builds out and as drainage improvements along the railroad tracks convey additional runoff to the east.

There are reports of residential flooding at the corner of 13th and L streets. The property is on the downhill side of the street and, most likely, street runoff overflows and enters the private property. Other reports of flooding occurred at the following locations:

- Residence at corner of 10th and L Street
- Property on east end of 11th Street
- Businesses on Mission Street between 12th and 13th Street
- Persistent ponding on N Street near River Road
- River Road intersections with Prado, Bonita, and Verde develop ponds following moderate rains

The proper installation of curbs and gutters as well as a drainage system discussed in this report should relieve these drainage problems.

3.4.2.3 Absence of Positive Slope

Existing infrastructure, specifically the railroad tracks, filled in historical drainage paths to the Salinas River. The result is that water ponds west of the tracks and causes flooding in the vicinity of Mission Street between 11th and 16th Streets. Several factors contribute to the ponding of storm water west of the railroad tracks:

- The physical barrier created by the tracks

- A blocked or destroyed culvert on the north side of 14th Street, east of Mission Street. According to local reports, this 12-inch culvert "dead ends" approximately 10-feet below grade east of the railroad crossing. No outlet could be located or determined to exist based on a field review and research of the culvert. The existing ditch on the north side of 14th Street, east of Mission Street, which conveys flow to the 12-inch culvert has no drainage outlet east of the railroad tracks. This causes flooding on the north side of 14th Street, west of the railroad and completely inundates the property until the ponded water percolates and/or evaporates.
- The runoff characteristics of site soils. Ponded storm water west of the tracks has nowhere to drain, and, therefore, infiltrates into the groundwater. The soil conditions and low permeability causes water to percolate slowly into the groundwater, resulting in several days (or weeks) of ponded water along Mission Street.

3.4.2.4 Drainage from Highway 101

Highway 101 is a State maintained highway and Caltrans should contribute a pro rata share to all proposed projects since Highway 101 contributes a portion of the runoff that flows through the community. Drainage from Highway 101 causes shallow flooding at the corner of 10th and K streets by collecting in flat areas immediately downstream of the underpass and adjacent to the northbound on-ramp.

Caltrans has several at grade culvert outlets concentrating and discharging runoff from Highway 101 onto San Miguel streets. The culvert locations and their diameters (range in size from 12-inch to 42-inch) are shown in Figure 4 of Appendix A. Caltrans failed to provide drainage facilities that routed runoff away from community streets and therefore is partially responsible for funding a portion of the improvements. Chapter 6, "Implementation Strategy" provides a breakdown of funding options for the proposed projects.

3.5 Proposed Capital Improvement Projects

The proposed projects and alignments presented in this report for mitigation of drainage and flooding problems in San Miguel were established using best engineering judgment and available information. The final projects may vary from what is presented in this report as a project becomes more defined.

Storm drainage improvements should be planned and incorporated into future development plans. Conceptually, a series of collection facilities such as curbs, gutters, and drop inlets, in addition to underground pipelines would convey storm runoff from the residential area west of Mission Street to the Salinas River. It is possible that many of the existing roadways would have to be improved to convey runoff effectively into the proposed system.

Several projects have been developed to address the different flooding areas and issues. The alternatives have been organized by specific problem:

- Absence of positive slope
- Residential and commercial flooding
- Drainage from Highway 101

A comprehensive project is necessary to mitigate the flooding problems in San Miguel. In planning a drainage and flood protection project, downstream improvements must be constructed prior to upstream improvements so that runoff can be managed. In San Miguel, any proposed solution must first devise a method for either retaining runoff west of the tracks, or conveying the runoff across the tracks.

3.5.1 San Miguel Community Design Plan

The purpose of the San Miguel Community Design Plan (Design Plan) is to establish specific standards, guidelines and programs that will ensure that new development adds value to the community while preserving

the positive features of San Miguel's character. The Design Plan discusses, in general terms, locations in the community that experience flooding in public right-of-way during the rainy season. The Design plan identifies three primary factors that contribute to this condition, including: 1) the absence of consistent and adequate positive slope from the vicinity of L Street to the Salinas River, 2) the railroad line, which acts as a barrier to natural flow from west to east, and 3) the absence of curbs and gutters in many locations.

This report addresses the issues outlined in the Design Plan and also proposes recommendations for mitigating the drainage and flood problems. The projects proposed in this report should be implemented concurrently or should complement any improvements proposed in the Design Plan.

3.5.2 Mission Street Design Plan

The County's Planning Department completed a conceptual street improvement plan for Mission Street, between 11th and 14th Street. Photograph 1 in Appendix B shows a photograph of Mission Street between 13th and 14th Street. The County's Planning Department anticipates that adequate funding is available through a grant to plan, design and construct the Mission Street enhancements between 13th and 14th Street. However, the Mission Street enhancement project does not include a storm drain along Mission Street. Therefore, the drainage projects proposed in this report also include storm drain laterals in Mission Street to properly collect and convey storm runoff. The projects proposed in this drainage plan will complement the Mission Street Design Plan and will provide a complete system for conveying storm runoff from Mission Street to the Salinas River.

3.5.3 Future Developments

This drainage plan examined existing drainage and future drainage from proposed developments or developable areas. **Incorporating future developments into the solutions of drainage problems is a key component of this drainage plan**. It is assumed that all new developments in San Miguel will include a drainage plan to either manage runoff on-site or to convey runoff away from the development. This report proposes to use new drainage facilities constructed by future development to convey runoff generated from existing residences in the community.

A scenario discussed in Chapter 6, "Implementation Strategy," would require that new developments add supplemental capacity to storm drains or detention basins. If a developer constructed a storm drain facility that was sized larger than required to serve their particular project, it would be possible to reimburse the developer, or give "credit" under an impact fee system, for the excess capacity. Alternatively, the lead agency could establish a "buy-in" fee to collect revenue from properties that contribute runoff to the system, but won't be connected to the drainage system until a future date. These upstream properties would be financially responsible for the additional capacity and the lead agency would develop a reimbursement agreement. Resolution Number 68-223 in Appendix D includes a provision for reimbursement to a developer (and successor in interest), for constructing drainage facilities with excess capacity to accommodate runoff from adjacent properties. The normal period for reimbursement would be from five to ten years, and in no event would it exceed 20 years.

There are two recently approved subdivisions on the eastern side of the community. As of this report, streets and utilities were constructed in one subdivision (Tract 1840) north of 16th Street, as shown in Photograph 2 in Appendix B. These developments all have curb and gutter systems and have constructed their own separate storm drain from the subdivision to the Salinas River. Only small areas of existing roadways, and potentially some runoff from existing residences, will drain to these facilities.

3.5.4 Project 1: Underground Storm Drain System

Prior to designing and constructing drainage infrastructure in the community, the underlying problem of how to convey flow to the Salinas River must be resolved. Downstream drainage facilities must be constructed prior to

upstream facilities. Storm drainage infrastructure can then be built upstream to feed runoff to the downstream components. This solution assumes that infrastructure to collect and convey upstream runoff from the residential areas of San Miguel will be constructed after the downstream facilities are constructed.

Project 1 includes a conventional underground storm drain system for the community. This system would collect and convey runoff for a majority of the community, and would resolve the issue of positive drainage from Mission Street to the Salinas River. Runoff that currently ponds and causes shallow flooding along Mission Street and the railroad would be collected at various drop inlets on Mission Street, 11th Street, 14th Street (River Road), and 16th Street. The runoff would then be conveyed in storm drain pipelines under the railroad, eventually discharging to the Salinas River. As shown in Figure 5 of Appendix A, a series of drop inlets would also collect runoff from developed areas east of the railroad tracks.

The system would generally be laid out as a series of three new drainage lines and an improved drainage ditch. These pipelines could be connected to existing drainage facilities and would be designed to accommodate future growth of the community. These drainage facilities would work in conjunction with the proposed Mission Street enhancements discussed above. The proposed alignments include:

- **River Road**
- **16th Street**
- **11th Street**
- **12th Street (drainage ditch)**

Underground pipelines are proposed, as opposed to drainage ditches, because the quantity of runoff (design flow) conveyed by the storm sewers would require a wide open ditch to convey an equivalent flow. An open ditch of this size may create a roadway hazard and land availability is limited on River Road and 16th Street. Improved ditches are proposed when flows are small enough to be carried in ditches 6-feet wide or less.

3.5.4.1 River Road Alignment

A 2,000 foot, combination 36 and 48-inch reinforced concrete pipeline is proposed for the River Road alignment, as shown in Figure 5 of Appendix A. The pipeline would begin on the west side of Mission Street and would collect runoff through a series of drop inlets. Two 30-inch storm drains laterals, each approximately 500 feet, would be constructed in Mission Street. This storm drain would collect runoff from Zones C and D, and a portion of Zone F. The River Road pipeline would function as the primary storm drain line in the community and would serve as the backbone to the drainage facilities proposed in the Mission Street Design Plan. It should be noted that this pipeline or an alternative facility would need to be constructed in conjunction with the proposed infrastructure of the Mission Street Design Plan in order to manage runoff. Photograph 4 of Appendix B shows River Road looking west towards the railroad.

3.5.4.2 16th Street Alignment

A 2,500 foot, combination 30 and 48-inch reinforced concrete pipeline is proposed for the 16th Street alignment, as shown in Figure 5 of Appendix A. The mainline would begin on the west side of L Street. Two 30-inch laterals in Mission Street, each approximately 450 feet, would connect to the mainline at the intersection of Mission and 16th Street. One of the 30-inch laterals collects runoff from the north portion of the community. A series of drop inlets in Mission and 16th Street would collect runoff and convey it to the Salinas River. This storm drain would collect runoff from Zones A, B, and E.

3.5.4.3 11th Street Alignment

A 1,200 foot, 36-inch reinforced concrete pipeline is proposed for the 11th Street alignment, as shown in Figure 5 of Appendix A. The pipeline would begin on the west side of Mission Street and would collect runoff through a series of drop inlets. Two 30-inch storm drain laterals, each approximately 500 feet, would be constructed in

Mission Street to collect runoff from the southern portion of the community. The 11th Street storm drain would collect runoff from Zone H and residential areas to the east of the railroad tracks. The pipeline depths would vary from 4 to 6-feet. Approximately 200 feet of drainage easement would need to be purchased to construct the pipeline in private property from the Salinas River outfall to the end of 11th Street. Photograph 3 in Appendix B shows a photograph of 11th Street looking west towards the railroad.

3.5.4.4 12th Street Alignment

An 800 foot long ditch would collect and convey runoff from east of N Street, between 11th Street and River Road. The ditch would be approximately 6 feet wide and 2 to 3 feet deep. The reason a ditch is proposed in this location is that the contributing watershed is small and current land use is not expected to increase runoff appreciably. Compared to an underground pipeline, a ditch would be an economical way to collect and convey storm water runoff. If the surrounding residential suburban land use becomes more urbanized, then the ditch should be replaced with a pipeline. While the ditch is in place, access to individual properties could be gained by constructing small to medium sized in line culverts at driveway access points.

3.5.4.5 Railroad Crossing and Easements

There are two San Miguel Community Service District easements that cross under the railroad tracks at River Road and 16th Street. The proposed alignments for two of the pipelines utilize these existing easements. The 11th Street alignment will need to secure a drainage easement from the railroad. Conducting any work, such as utility investigation or surveys, on Union Pacific Railroad (UPRR) Company right of way requires a permit to be on railroad property.

UPRR maintains specifications for constructing pipelines under railroad crossings. Pipelines installed under railroad tracks and right-of-way are required to be encased in a larger pipe. The casing should extend beyond the limit of the railroad right-of-way. It is assumed that bore and jack construction would be required for all crossings under the railroad.

3.5.4.6 Maintenance

A lead agency would need to be responsible for maintaining the drainage facilities. Typical maintenance would include clearing debris and sediment from clogged drop inlets. Infrequent but costlier maintenance includes replacing sections of damaged pipeline.

3.5.4.7 Benefits and Constraints

Project 1 can be envisioned as a long-term Master Drainage Plan. These drainage improvements can be completed as the need arises and partially paid for by the collection of fees from development in the community. The largest drawback to the project is the cost of these facilities. Permitting and constructing a crossing under the railroad will require substantial time, but if planned properly, should not preclude the implementation of the project. The River Road storm drain will be needed to accept runoff from the planned Mission Street enhancement project and should be considered a top priority. Also the project will require the construction of new outfalls at the Salinas River. Permitting these outfalls can likely be completed utilizing the Nationwide Permit Program of Section 404 of the Clean Water Act. However, the Salinas River is home to several federally listed endangered species, thus extensive consultation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service should be anticipated. National Pollution Discharge Elimination System (NPDES) permits may require pretreatment of storm water prior to discharge to the Salinas River. This may require the design and construction of additional facilities to meet State Water Resource Control Board NPDES Phase II mandates. Chapter 4 of this report discusses the environmental permitting requirements associated with these proposed projects.

3.5.4.8 Project 1 Costs

The total cost for constructing all three pipelines and the drainage ditch is approximately $4.5 million. The breakdown of costs for each proposed alignment is provided in Table 3-2. The breakdown of detailed costs of each facility is summarized in Table 3-3.

Table 3-2: Storm Drain Cost Summary

FACILITY	COST ($)
River Road Pipeline	1,520,000
16th Street Pipeline	1,477,000
11th Street Pipeline	1,252,000
12th Street Drainage Ditch	303,000
TOTAL	**4,552,000**

Table 3-3: Storm Drain System Estimated Costs

ITEM	QUANTITY	UNIT	UNIT COST ($)	TOTAL [1]
River Road Alignment				
Railroad Crossing	100	L.F.	$500 per foot	$50,000
Bore/Jack Pits	2	each	$20,000	$40,000
30-inch Mission St. RCP Lateral	975	L.F.	150 per foot	$146,000
36 and 48-inch RCP	2,000	L.F.	$175 per foot	$350,000
Curbs and Gutters	2,500	L.F.	$15 per foot	$38,000
Drops Inlets	24	each	$5,000	$120,000
Roadway Reconstruction	Estimate			$80,000
Salinas River Outfall	1	L.S.	$20,000	$20,000
			Subtotal	**$844,000**
Contingency [2]			20 percent of subtotal	$169,000
Engineering/Design [2]			20 percent of subtotal	$169,000
Administrative/Environmental [2]			40 percent of subtotal	$338,000
			Total	**$1,520,000**
16th Street Alignment				
Railroad Crossing	100	L.F.	$500 per foot	$50,000
Bore/Jack Pits	2	each	$20,000	$40,000
30 and 48-inch RCP	2,100	L.F.	$175 per foot	$368,000
30-inch Mission St. RCP Lateral	900	L.F.	$150 per foot	$135,000
Curbs and Gutters	2,500	L.F.	$15 per foot	$38,000
Drops Inlets	18	each	$5,000	$90,000
Roadway Reconstruction	Estimate			$80,000
Salinas River Outfall	1	L.S.	$20,000	$20,000
			Subtotal	**$821,000**
Contingency			20 percent of subtotal	$164,000
Engineering/Design			20 percent of subtotal	$164,000
Administrative/Environmental			40 percent of subtotal	$328,000
			Total	**$1,477,000**

ITEM	QUANTITY	UNIT	UNIT COST ($)	TOTAL [1]
11th Street Alignment				
Railroad Crossing	100	L.F.	$500 per foot	$50,000
Bore/Jack Pits	2	each	$20,000	$40,000
30-inch Mission St. RCP Lateral	1,000	L.F.	$150 per foot	$150,000
36-inch RCP	1,200	L.F.	$175 per foot	$210,000
Drainage Easement	2,000	Square feet	$5 per square foot	$10,000
Curbs and Gutters	2,400	L.F.	$15 per foot	$36,000
Drops Inlets	16	each	$5,000	$80,000
Roadway Reconstruction	Estimate			$100,000
Salinas River Outfall	1	L.S.	$20,000	$20,000
			Subtotal	**$696,000**
Contingency			20 percent of subtotal	$139,000
Engineering/Design			20 percent of subtotal	$139,000
Administrative/Environmental			40 percent of subtotal	$278,000
			Total	**$1,252,000**
12th Street Alignment				
Improve drainage ditch	800	L.F.	$85	$68,000
Roadway Reconstruction	Estimate			$80,000
Salinas River Outfall	1	L.S.	$20,000	$20,000
			Subtotal	**$168,000**
Contingency			20 percent of subtotal	$34,000
Engineering/Design			20 percent of subtotal	$34,000
Administrative/Environmental			40 percent of subtotal	$67,000
			Total	**$303,000**

Notes:
1. Totals are rounded to the nearest thousand dollar.
2. County Overhead & Support Costs for Construction Project Planning. Use 80% cumulative markup on construction costs for Non-Coastal Zone Projects. Percentages provided by County (Typical to all estimates in this report).

3.5.4.9 Project 1 Recommendation

As the community develops and the Mission Street Design Plan is implemented, these facilities should be planned, design and constructed. In order of priority, the projects should be planned as follows:

1. **River Road Pipeline. This is the main drainage line to accept runoff from the proposed redevelopment of the Mission Street Design Plan and thus is a logical choice to implement first.**
2. **16th Street Pipeline. This drainage line would provide the conveyance of runoff for proposed development in the northern portion of the community and would intercept a portion of the runoff entering the Mission Street central district. The community would benefit if developers constructed new storm drain facilities with supplemental capacity to serve existing and future upstream residents.**
3. **11th Street Pipeline. This line drains the southern portion of the community and accepts a certain amount of runoff from Highway 101.**

4. **12th Street Drainage Ditch. This is the lowest priority because the ditch would drain a small watershed and the area should remain fairly undeveloped based on its current Residential Suburban land use designation.**

3.5.5 PROJECT 2: INFILTRATION BASINS

Project 2 involves the construction of one or multiple separate detention and/or infiltration basins on land bounded by Mission Street and the railroad tracks, between 11th Street and 16th Street. Conceptual locations for the proposed detention basins are shown in Figure 6 of Appendix A. These locations are suggested because the railroad has shown interest in selling this non-utilized area. Development of this project would require the purchase of vacant land owned by Union Pacific Railroad and private landowners. The County's General Services is in the process of discussing acquisition of approximately 4 acres of property in the area proposed for the detention basins. If purchased, this area could serve as the site of future detention basins.

The detention basin concept would serve as an interim solution for mitigating flooding of existing homes and businesses west of the railroad tracks. Storm runoff collected west of the railroad tracks would be conveyed through existing or newly constructed drainage infrastructure (e.g. Mission Street Enhancements) to the basins. This land would flood and allow the runoff to slowly infiltrate into the soil. The basins are considered interim because construction of drainage facilities on this downtown street frontage would be considered underutilization of property. Additional information on soil permeability properties is necessary to determine the size of the basins necessary to detain runoff from existing development. Gathering soil permeability information will also assist in the determination on whether the basins could serve future development north of 16th Street. For this study, it is assumed that the basins could not serve future development. We have also assumed that a single basin would hold approximately 5 acre-feet and cover about one acre of land. The basins could be phased out following the construction of storm drain pipelines proposed in Project 1.

The basins would be designed to store runoff from a 10-year rain event. To sustain containment of runoff, the detention basins should be fitted with overflow outlet piping. Otherwise, if the basin becomes overloaded, water could potentially exit the basin and flood Mission Street. Since the basins would be located west of the railroad tracks, the piping would convey overflow water from the basin to the Salinas River. This would require bore and jack construction under the railroad, increasing the cost of this alternative.

Instead of overflow piping from the detention basin, flap gates could be placed on the inlet pipes conveying flow to the detention basin. When the water reached a maximum elevation in the basin, the flap gates would close behind the stored water, preventing additional flow from entering the basin. This approach would cause the storm drain system to surcharge and the backwater effect would create isolated ponding of water near the drop inlets or lower lying elevations in the community.

For the purposes of developing cost estimates and comparing alternatives, this report assumes that flap gates would be placed on the inlet piping. Since the detention basins are considered an interim solution, constructing overflow piping under the railroad would be cost prohibitive.

3.5.5.1 Benefits and Constraints

This project is an interim solution to a long-term problem. Although development of the project would alleviate current flooding problems in the downtown area, it would do nothing to solve existing drainage problems east of the railroad tracks. This project would also not address increased runoff resulting from future development north of 16th Street and east of the railroad tracks.

The benefit of the detention basins is the reduced cost when compared to the storm drain pipelines proposed in Project 1. For mitigating flooding of the downtown area, the community could choose to either construct the detention basins or the River Road alignment storm drain pipeline discussed in Project 1. The two detention

basins would cost approximately $1,146,000, which is approximately $374,000 less than the storm sewer pipeline in River Road. However, there are drawbacks related to a detention basin project.

The construction of one or multiple basins would occupy land that has been identified in the San Miguel Community Design Plan as the "town center." Some of the facilities proposed for the area between Mission Street and the railroad include a future community building, public plaza, commercial development, and a community park. The basins would pose a threat to the expressed desires of residents in San Miguel to enhance the development and character of San Miguel's downtown. In order to soften the appearance of detention basins, a community park could be developed and incorporated into a "semi-permanent" drainage facility. The Design Plan could be modified to incorporate the detention facilities, however, it is unlikely that any other significant development, other than a park, could be built on the same site.

3.5.5.2 Project 2 Costs

The total cost for constructing two detention basins as shown in Figure 6 of Appendix A is approximately $1,146,000. The breakdown of costs for the two basins is provided in Table 3-4. It should be noted that landscaping of the basin is a considerable cost, and could be eliminated to reduce the project cost for functionality only. A storm drain to convey runoff in Mission Street is included in the cost estimate.

Table 3-4: Detention Basin Estimated Costs

ITEM	QUANTITY	UNIT	UNIT COST ($)	TOTAL [1]
Excavation and Disposal	9,680	C.Y.	$8.5 per cubic yard	$82,000
Emergency Outfall	1	L.S.	$7,500 per unit	$8,000
Inlets	2	each	$1,500 per unit	$3,000
Land Cost	2	L.S.	$100,000 per acre	$200,000
30-inch Mission St. RCP Lateral	975	L.F.	150 per foot	$146,000
Drops Inlets	8	each	$5,000	$40,000
Landscaping	3	acres	$40,000 per acre	$120,000
Chain Link Fence	2,500	L.F.	$15 per foot	$38,000
			Subtotal [3]	**$637,000**
Contingency [2]			20 percent of subtotal	$127,000
Engineering/Design [2]			20 percent of subtotal	$127,000
Administrative/Environmental [2]			40 percent of subtotal	$255,000
			Total	**$1,146,000**

Notes:
1: Totals are rounded to the nearest thousand dollar.
2: County Overhead & Support Costs for Construction Project Planning. Use 80% cumulative markup on construction costs for Non-Coastal Zone Projects. Percentages provided by County (Typical to all estimates in this report).
3: Some roadway improvements may be necessary to ensure proper gutter flow line grades. These costs, and the cost of side walk construction, are not included.

3.5.5.3 Project 2 Recommendation

Although the construction of a detention basin is less costly than a storm drain system, San Miguel would lose valuable land in the downtown area that is currently planned for commercial, recreational and community development. The future development of the town center will add value to the community, therefore, land should remain available for implementation of the Design Plan. This consideration, and the fact that the detention basins are an interim solution to a long term-problem, establishes the primary reasons that this project is not recommended for further consideration.

3.5.6 PROJECT 3: MITIGATE RESIDENTIAL FLOODING

The final component of a comprehensive storm drainage and flood control project would be the mitigation of flooding problems in the residential neighborhoods of San Miguel. The absence of a continuous curb and gutter system has lead to the concentration of street runoff in areas that do not have curbs or gutters and generally represent local low spots within a neighborhood block. Following construction of Project 1, a series of curbs and gutters would be constructed to collect and convey runoff away from the residential neighborhoods, to the storm drain pipelines shown in Figure 5 of Appendix A, eventually discharging to the Salinas River.

3.5.6.1 Curbs and Gutters

Many roadway shoulders in San Miguel are bare, allowing runoff from impervious surfaces to flow freely onto residential lots. Low spots on residential lots collect storm runoff and cause shallow ponding in many areas of the community. The construction of a network of curbs and gutters would function to confine most runoff to the streets, away from residential lots. Photograph 5 and Photograph 6 show typical curb and gutter patterns in San Miguel. Most recently constructed subdivisions east of Mission Street have curbs and gutters.

There are no existing curbs and gutters in residential neighborhoods west of Mission Street, between 11th and 19th Street. Minimal lengths of curbs and gutters exist east of the railroad tracks. Approximately 41,100 feet of new curbs and gutters are needed to construct a continuous network throughout the entire community. Street frontage proposed for new curb and gutter installation is shown in Figure 7 of Appendix A.

In order to install curbs and gutters, a typical underground storm drain system would be necessary to collect and convey runoff away from the residential neighborhoods. Storm runoff would flow in the gutters to one of the drop inlets shown in Figure 5 of Appendix A. From the drop inlets, water would then be conveyed through the storm drains discussed in Project 1.

In order to get positive flow along the new gutters leading to the new drop inlets, portions of some existing roadways may need to be reconstructed. This would entail raising or lowering the flowline at the edge of pavement. This may necessitate that the roadway crown and other sections of roadway also be reconstructed.

Section 3.4.2.1 discussed the County ordinances regarding curb and gutter construction requirements. New residential subdivisions will be constructed with curbs and gutters. However, an inconsistent layout of curbs and gutters exacerbates localized flooding problems by directing additional runoff to properties without curbs and gutters. For this reason, the construction of curbs and gutters should be conducted simultaneously in order to be effective. The new residential subdivision located east of Mission Street and north of 16th Street will not exacerbate drainage problems to existing residents since the new development was designed to collect and convey on site runoff, and discharge to a new storm drain and outfall as shown in Figure 5 of Appendix A. The same holds true for new developments east of Mission Street and south of 16th Street, and a third north of 11th Street.

3.5.6.2 Benefits and Constraints

This project greatly increases the usability of the community streets by providing formal street infrastructure. Secondly, it provides an organized way to collect and convey runoff throughout the entire community, and also eliminates shallow ponding problems. This project will likely eliminate flooding reported on residential property at 13th and L Street, and other properties along 10th Street. Curbs, gutters and any roadway improvements to adjust the grade should also eliminate flooding problems created by Highway 101 runoff.

As with any capital project, the cost for constructing proposed improvements is a primary obstacle. The current flooding problems are primarily nuisance shallow flooding at street intersections and driveways. Only sporadic and minor damages have been reported during flood events. The cost of these damages does not likely exceed the cost of the overall project.

Also, in some locations of San Miguel, the roadway grades might need to be adjusted to allow for positive gutter flow to collection facilities. These costs have not been included as a separate line item, but a contingency is included in the estimate.

3.5.6.3 Project 3 Costs

The total cost for constructing curbs and gutters in the entire community is approximately $1.1 million. The breakdown of costs for the curb and gutter system in each zone is provided in Table 3-5.

Table 3-5: Curb and Gutter Estimated Costs

DRAINAGE ZONE	QUANTITY	UNIT	UNIT COST ($)	TOTAL [1]
Zone B	2,400	L.F.	$15 per foot	$36,000
Zone D	13,350	L.F.	$15 per foot	$200,000
Zone E	4,715	L.F.	$15 per foot	$71,000
Zone F	9,775	L.F.	$15 per foot	$147,000
Zone H	10,875	L.F.	$15 per foot	$163,000
			Subtotal [3]	**$617,000**
Contingency [2]			20 percent of subtotal	$123,000
Engineering/Design [2]			20 percent of subtotal	$123,000
Administrative/Environmental [2]			40 percent of subtotal	$247,000
			Total	**$1,110,000**

Notes:
1: Totals are rounded to the nearest thousand dollar.
2: County Overhead & Support Costs for Construction Project Planning. Use 80% cumulative markup on construction costs for Non-Coastal Zone Projects. Percentages provided by County (Typical to all estimates in this report).
c: Some roadway improvements may be necessary to ensure proper gutter flow line grades. These costs, and the cost of side walk construction, are not included.

3.5.6.4 Project 3 Recommendation

The final piece of a comprehensive and effective drainage infrastructure project would be the construction of a continuous curb and gutter system, along with a storm sewer collection system. Curbs and gutters should be planned and designed only after the storm drain pipes in Project 1 are implemented.

3.5.7 PROPOSED PROJECT

The proposed projects to implement include Project 1 and 3. The phasing of implementation depends primarily on 1) the needs and desires of the community, 2) available funding, and 3) the implementation of the Mission Street Design Plan and the Community Design Plan. Not all alignments proposed in Project 1 or all curbs and gutters in Project 3 need to be constructed simultaneously. If the Mission Street Design Plan is implemented, then a drainage system is necessary to convey flow from Mission Street to the Salinas River. The logical first step would be to construct the 36 and 48-inch reinforced concrete pipe in River Road along with the Mission Street improvements. Curbs and gutters along Mission Street, between 11th and 16th Street could then be constructed since a storm drain to convey runoff would be available. This element of the overall project would serve nearly 50 percent of the community. As subsequent storm drains in 11th and 16th Street came on line, additional curbs and gutters in the remaining neighborhoods could then be constructed.

The recommended project would mitigate flooding in residential neighborhoods and provide a terminal disposal point for the collected runoff. It should be noted that the proposed improvements would address flooding created by a 10-year or less rain event. The benefit is that the most common problems experienced by residences on an annual basis would be corrected. However, flooding problems could be expected for events larger than a 10-year event.

Chapter 6 discusses the implementation strategy for planning, designing, constructing and phasing the recommended project.

3.5.8 ADDITIONAL RECOMMENDATIONS

3.5.8.1 Coordinate with Development Projects

Developers are responsible for providing utility service, such as storm drainage, where expansion of service is required for new development. In San Miguel, the potential for increased residential and commercial development provides an opportunity to increase capacity of new drainage facilities to serve existing customers. For example, the new development east of Mission Street and north of 16th Street (Tract 1840) constructed a curb, gutter and storm drain system to collect and convey on site runoff, and discharge to the Salinas River. The storm drain is located in D Street. In order to benefit existing and future residents west of Mission Street and south of 16th Street, as a condition of approval for the development, the County's planning department could have required that the developer construct the storm drain in 16th Street and provide sufficient capacity to connect existing and future upstream residents.

If notified early in the planning process, developers can incorporate storm drain alignments proposed in this report into their civil site work. The additional cost for installing a larger pipeline would be recovered when upstream users paid a buy in fee for connecting to the downstream facilities. The District's policy (see Appendix D) establishing allocation of costs for drainage facilities contains a provision for reimbursing developers. However, the lead agency in San Miguel needs to formalize a procedure for establishing an appropriate buy in fee to reimburse developers.

3.5.8.2 System Improvements with Increased Development

The increased development that will occur in San Miguel through build out will change the hydrologic character of the community. The construction of new homes and roads will increase the amount of impervious surfaces that will limit the ability of soils to absorb rainfall, thereby increasing the amount of surface runoff. This development might also increase the frequency of localized flooding and subject more property to flood damage unless concurrent drainage improvements are made.

New development is expected to increase storm water flows in the community. If runoff is not managed on-site, then impacts associated with increased development will be most pronounced in lower lying, unpaved areas lacking drainage infrastructure (if these areas are located within the storm runoff drainage course). Increased runoff will raise the potential for erosion of unpaved roads. Drainage improvements should be planned with any proposed development. Regardless of whether drainage problems exist prior to development, mitigation should be planned as not to increase the severity or frequency of problems. Such mitigation could include on-site detention of runoff, thereby preventing the increase of runoff onto lower lying properties.

It is recommended that development fees collected for San Miguel be used to fund drainage improvements for areas that will be most impacted by future development. Development fees collected to date should also be used to fund projects that mitigate for existing problems. If new development can not retain runoff on site, then it should be responsible for funding the necessary improvements to convey increased runoff.

In conjunction with planning drainage improvements with future development, critical lots that are at risk to flood damages due to their location should be identified. These lots should dedicate drainage easements on their property or design sufficient conveyance facilities as not to impede the flow of storm water.

3.5.8.3 Rolled Asphalt Berms

Rolled asphalt berm structures were found in isolated locations in San Miguel. While it would be incorrect to label such structures as curbs and gutters, berms can often be an effective means of containing runoff within the roadway and preventing it from flowing onto private property. However, the berms observed throughout the community were of varying heights, sometimes only 2-3 inches in height. These lower berms may do little to prevent localized flooding problems during large magnitude storm events.

It is recommended that rolled asphalt berms (Cal Trans Type E4 mountable berm with backsloped choker at a minimum of 6-inch above the gutter flowline) be used where berms are needed to control roadside runoff. Installation of rolled asphalt berms would cost a property owner approximately $20 per foot or approximately $1,000[4] for the County to install the berms in front of a 50-foot wide parcel. Resident complaints indicate many drainage problems within San Miguel could be resolved with the construction of berms to control water within the street right of way. However, it is important to note that there is a limit to the extent which berms can be installed without the eventual installation of a catchment and underground storm drain system. This is because berms restrict runoff to streets, reducing the amount of runoff that is infiltrated on private property, thus increasing the total volume of runoff. Berms have a finite capacity and once this capacity is reached, runoff will overtop the berms and flow onto private property. Catchments prevent overtopping of the berms. At the downstream end of a watershed, this volume can be quite substantial. Therefore, an underground storm drain system, an expensive improvement, is often necessary at the end of the drainage path.

Additionally, the piecemeal installation of berms can result in creating or exacerbating drainage problems at nearby properties. While the property owner that installs the berm may benefit, berms cause runoff to concentrate and can kick water off to neighboring and/or downstream properties.

3.5.8.4 Conduct Maintenance on Existing Drainage Channels

All the natural drainage channels that conveyed flow from west to east were filled in by the railroad. **Existing natural or fabricated drainage channels should be kept free of obstructions such as fallen trees, debris, and sedimentation to maintain capacity in the drainage system.** Primary responsibility for this maintenance rests with the owners of the property through which the drainage channels pass. If the drainage channels pass through public property, such as County roads, then the County's maintenance department would be responsible for removing impediments. The District should continue to provide leadership, advice and encouragement to property owners and local agencies to assume these responsibilities.

3.6 Cost Estimates

Project cost estimates have been provided in this report. More detail on the unit cost and quantity calculations are provided in Appendix E, Engineering Technical Memorandum. Some changes to the cost estimates are reflected in Chapter 3, but not revised in Appendix E, therefore, the final numbers might not be consistent. These cost estimates are preliminary and subject to revision based on more definition and detail of the recommended project. Construction cost adjustments for inflation will be required if the projects are implemented years from now.

[4] Includes design, administrative, environmental and contingency.

CHAPTER 4 ENVIRONMENTAL FEASIBILITY ANALYSIS

Chapter Synopsis: This chapter discusses the environmental permitting and regulatory requirements for the proposed alternatives. An environmental technical memorandum was prepared for this study and is included in Appendix F. The technical memorandum provides greater detail on the environmental methodology, analysis and alternatives.

4.1 Environmental Analysis Objective

The study investigated the potential environmental impacts, state and federal resource agency permit requirements for the proposed projects. The objective was to conduct a "fatal flaw" preliminary environmental feasibility analysis on the proposed drainage and/or flood control mitigation alternatives described in Chapter 3. This analysis assessed the environmental impacts and constraints associated with the proposed projects. Each proposed project was examined for the biological resources, cultural resources, geology and soils, hydrology and water quality, and land use constraints likely to be present in each given area. Specifically the investigation included:

- Determination of whether the projects can be permitted
- Outline of the types of probable mitigation measures
- Outline of additional studies required for the next phase implementation
- Determination of the level of California Environmental Quality Act (CEQA) documentation necessary (e.g. EIR, Negative Declaration, Categorical Exemption) for each project
- Identification of the applicable environmental regulatory requirements of jurisdictional agencies (e.g. U.S. Army Corps of Engineers, California Department of Fish and Game, Regional Water Quality Control Board)
- Outline of regulatory permitting requirements and approximate schedule for obtaining permits

4.1.1 Environmental Analysis Methodology

Project alternatives were analyzed for environmental constraints that would prevent agency approval, increase costs (particularly for mitigation), or delay the project schedule. Existing documentation relative to each resource topic (e.g., biological resources, cultural resources, water quality, and land use) was examined to help determine the likelihood of constraints.

4.1.2 Biological Resources

A reconnaissance level site assessment was conducted to investigate biological resources in the project area on June 30, 2003. The assessment area included the proposed project sites and bordering areas. Each site was generally assessed for its potential to support sensitive biological and botanical resources. Information from the California Natural Diversity Database was used to determine the potential for sensitive species and their habitat in the project areas.

4.1.3 Cultural Resources

The San Luis Obispo County Department of Planning and Building does not maintain a database of cultural resource records in San Miguel. While no standard record searches or site visits were conducted, two cultural resource studies conducted in the area were reviewed, and the area should be assumed as a culturally sensitive area due to the vicinity of Mission San Miguel and the Salinas River.

4.1.4 Land Use

The *San Luis Obispo General Plan* and *San Miguel Design Plan* were reviewed to determine whether the project was consistent with local policies. A Geographic Information System was used to examine the presence of prime farmland and farmland of local or state importance in the project area.

4.2 Environmental Analysis Results

4.2.1 Environmental Constraints

Table 4-1 summarizes the environmental constraints that may be encountered for each project alternative. Based on this preliminary analysis, major environmental constraints include potential impacts to endangered/threatened species habitat (Project 1-Storm Drain) and the potential presence of cultural resources (Project 1, Project 2-detention basin, Project 3-curb and gutter system).

Although studies were not conducted for the presence of hazardous materials, there is local concern that hazardous materials may be present near the railroad and within its right of way. This would impact Project 1 and 2 since bore and jack construction would be employed to install the pipeline under the railroad. Also, the detention basins in Project 2 would be installed on land currently owned by the railroad. A Phase I and Phase II site assessment would be required as part of the California Environmental Quality Act review process, and any hazardous soil would need to be excavated and disposed of at an appropriate facility during construction. Higher project costs and schedule delays may result from the required preconstruction studies and handling and disposal during construction.

4.2.2 Permit Requirements

An assessment of the state and federal environmental permits that may be necessary for each project alternative is provided in Table 4-2. An estimate of the timeframe typically required to obtain each type of permit is summarized in Table 4-3. Based on the level of research performed for this analysis, all of the project alternatives would be possible to permit if mitigation measures are implemented to avoid significant environmental impacts.

4.2.3 Potential Mitigation

Potential impacts to environmental resources may result from the proposed project alternatives. Those impacts may require implementation of mitigation measures to protect sensitive, threatened or endangered species, water quality (including erosion control), and cultural resources. Table 4-4 summarizes the potential mitigation measures for each project.

Table 4-4: Potential Mitigation Requirements

PROJECT	POTENTIAL MITIGATION
1 – Underground Storm Drains	• Erosion and sediment control measures during construction • Preconstruction surveys for sensitive species • Construction monitoring in locations with sensitive species habitat • Record search for cultural resources; surface surveys during ground disturbance depending on results of record search; identifying exclusion zones for cultural resources; Recovery and treatment could be required depending on findings
2 – Infiltration/Detention Basins	• Erosion and sediment control measures during construction • Record search for cultural resources; surface

PROJECT	POTENTIAL MITIGATION
	surveys during ground disturbance depending on results of record search; identifying exclusion zones for cultural resources; Recovery and treatment could be required depending on findings
3 – Curb and Gutter System	• Erosion and sediment control measures during construction • Record search for cultural resources; surface surveys during ground disturbance depending on results of record search; identifying exclusion zones for cultural resources; Recovery and treatment could be required depending on findings

4.2.4 Additional Studies and Surveys

The following studies/surveys will need to be performed in order to begin the permitting phase of the project:

- Habitat assessment for Project 1
- Sensitive species surveys for Project 1
- Cultural resource record searches for all alternatives

Table 4-1: Environmental Constraints

PROJECT	BIOLOGICAL	CULTURAL RESOURCES[5]	LAND USE
Project 1: Develop an underground storm drain system with a series of three new drainage lines and an improved drainage ditch that would convey runoff to the Salinas River floodplain via four new outfalls.	Construction of outfalls to the Salinas River floodplain may affect endangered/threatened species habitat, including steelhead, arroyo toad, California red-legged frog (CRLF), and San Joaquin kit fox (SJKF). Other sensitive species that may also be affected include: shining navarretia (a rare plant), western spadefoot, southwestern pond turtle, California horned lizard, two-striped garter snake, nesting birds in riparian zone, and San Joaquin pocket mouse. Higher project costs and schedule delays may result from required surveys, monitoring, and mitigation for sensitive species.	Recorded sites in San Miguel include Mission San Miguel and the Rio-Caledonia Adobe. Areas in San Miguel could be potentially sensitive due to the vicinity of Mission San Miguel and the Salinas River floodplain. Higher project costs and schedule delays may result from monitoring during construction and treatment of finds.	None
Project 2: Construct one or two separate retention and infiltration basins between 11th Street and 16th Street and between Mission Street and the railroad tracks.	None	Recorded sites in San Miguel include Mission San Miguel and the Rio-Caledonia Adobe. Areas in San Miguel could be potentially sensitive due to the vicinity of Mission San Miguel and the Salinas River floodplain. Higher project costs and schedule delays may result from monitoring during construction and treatment of finds.	None
Project 3: Construct curbs and gutters in strategic areas throughout San Miguel to convey flows to underground storm drain system.	Construct curbs and gutters in areas throughout San Miguel to convey flows to underground storm drain system.	Recorded sites in San Miguel include Mission San Miguel and the Rio-Caledonia Adobe. Areas in San Miguel could be potentially sensitive due to the vicinity of Mission San Miguel and the Salinas River floodplain. Higher project costs and schedule delays may result from monitoring during construction and treatment of finds.	None

[5] The San Luis Obispo County Department of Planning and Building does not maintain a records database for San Miguel. No standard record searches or site visits were conducted.

Table 4-2: Permit Assessment

PROJECT	PROJECT DESCRIPTION	CEQA[6] DOCUMENT	SHPO 106[7]	CDFG 1601[8]	CORPS 404 PERMIT[9]	USFWS SECTION 7[10]	NMFS SECTION 7[11]	RWQCB 401[12]	SWRCB GENERAL PERMIT[13]	SWRCB PHASE II SWMP[14]	NOTES
Project 1: Construct storm sewer pipelines	Construct three new drainage lines in River Road, 16th Street, and 11th Street; improve an approximately 400-foot section of an open drainage ditch along 12th Street; construct four outfalls to the Salinas River floodplain.	ND[15] (see notes)	Possibly (see notes)	Yes	Possibly (see notes)	Possibly (see notes)	Possibly (see notes)	Possibly (see notes)	Yes	No	Because there is potential to impact threatened/endangered species with the construction of new outfalls at the Salinas River, a ND/MND will be required. A Corps permit will be required if the new outfall is constructed below ordinary high water (OHW). The Corps will consult with the NMFS and USFWS if threatened/endangered species could be affected by outfall construction and/or operation. If a Corps permit is required, a 401 Certification from the RWQCB will also be necessary. Depending on the results of a cultural records search, and if the Corps is involved, Section 106 consultation may be required.
Project 2: Construct infiltration basins	Build one or two retention and infiltration basins between 11th Street and 16th Street and between Mission Street and the railroad tracks; all runoff west of the railroad tracks would be conveyed to one or both basins.	ND (see notes)	No	No	No	No	No	No	Yes	No	Because the project involves the construction of new facilities and there is potential to affect cultural resources while excavating the infiltration basins, a ND/MND will be required. However, since there are no federal permits required for the project, Section 106 Consultation is not triggered.
Project 3: Construct curbs and gutters	Construct curbs and gutters in areas throughout San Miguel to convey flows to underground storm drain system.	ND (see notes)	No	No	No	No	No	No	Yes	No	Because there is potential to affect cultural resources, a ND/MND will be required. However, since there are no federal permits required for the project, Section 106 Consultation is not triggered.

[6] California Environmental Quality Act: Required if a state agency has to take action on a project; If the project does not qualify for an exemption, the compliance document is either a Negative Declaration or Mitigated Negative Declaration (ND) or an Environmental Impact Report (EIR)
[7] State Historic Preservation Office – Section 106 (Cultural resource information was obtained solely from the San Luis Obispo County Department of Planning and Building): Required if a project has the potential to impact cultural resources
[8] California Department of Fish and Game – 1601 Streambed Alteration Agreement: Required if a project has the potential to impact sensitive species or their habitat
[9] U.S. Army Corps of Engineers – 404 Permit: Required if a project involves work below the ordinary high water mark
[10] U.S. Fish and Wildlife Service – Section 7 Consultation: Required if a project has the potential to impact sensitive species or their habitat
[11] National Marine Fisheries Service – Section 7 Consultation: Required if a project has the potential to impact sensitive marine and anadromous fish species or their habitat
[12] Regional Water Quality Control Board – 401 Certification: Required if a project has the potential to discharge to surface water, ground water, or other water systems
[13] State Water Resources Control Board – National Pollutant Discharge Elimination System (NPDES) General Construction Permit: Required if a project involves ground disturbance of more than 1 acre
[14] State Water Resources Control Board – Phase II Storm Water Management Plan Revision: Required for potential discharges to surface water, ground water, or other water systems by small municipal separate storm sewer systems not covered by the Phase I program
[15] Negative Declaration or Mitigated Negative Declaration: Required if projects with impacts that are less than significant or less than significant with mitigation

Table 4-3: Permitting Timeframe

PERMIT	TYPICAL TIMEFRAME [1] (MONTHS)	NOTES
California Environmental Quality Act (CEQA)		
Exemption	< 1	
Negative Declaration (ND)/Mitigated Negative Declaration (MND)	6 - 12	
California Department of Fish and Game (CDFG) 1601 Streambed Alteration Agreement	3 - 6	CEQA must be completed before the 1601 Agreement can be issued.
U.S. Army Corps of Engineers (Corps) Section 404		
Nationwide Permit	1 - 3	Section 7 and Section 106 consultations are required to be complete.
Individual Permit	12 - 18	National Environmental Policy Act (NEPA) compliance is required, which can take one year or more.
U. S. Fish and Wildlife Service (USFWS)/ National Marine Fisheries Service (NMFS) Section 7 Consultation		
Informal	1 - 3	
Formal	6 - 12	
State Historic Preservation Office (SHPO) Section 106 Consultation	6 - 12	
Regional Water Quality Control Board (RWQCB) 401 Certification	1 - 3	CEQA must be completed before the 401 Certification can be issued.
State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Construction Permit	< 1	A Storm Water Pollution Prevention Plan (SWPPP) must be prepared prior to construction and implemented during construction.

1. Timeframes do not include time required to perform pre-applications studies, to prepare required applications, and to complete prerequisite approvals.

CHAPTER 5 FUNDING ALTERNATIVES

Chapter Synopsis: This chapter provides a summary of funding options, including criteria for qualifying projects, available funds, and cost sharing formulas. This chapter also discusses recommended funding sources that match the types of proposed projects. A funding review technical memorandum was prepared for this study and is presented in Appendix G.

5.1 Overview of Funding Responsibilities

The District is the responsible agency for managing, planning, and maintaining historical drainage and flood control facilities in unincorporated areas of the District. It is the District's policy that funding for these services comes from two sources. Planning costs are typically advanced or funded through the District's general flood control fund, with the intentions that the costs are reimbursed by the Assessment District or benefiting zone. However, design and construction costs of drainage and flood control projects are the responsibility of the community or area that benefits from the capital improvement. If budget constraints prevent the District from providing funds to pay for the planning and design, and the local community is unwilling to pay, then the project will not be advanced until funds become available.

In some communities, local agencies (e.g. community services districts) are legally authorized to provide drainage and flood control services by the Local Agency Formation Commission (LAFCo). In these communities, the local agency is responsible for implementing projects and can implement projects with the District. The San Miguel CSD does not currently have drainage service authority. The first step in establishing the CSD as the lead agency is to amend its charter, through an election, to include drainage services.

Funds to implement the drainage or flood control projects can be generated through various federal, state, and local sources through grants, cost sharing agreements, taxes, assessments and fees. This chapter provides a summary of funding options, including criteria for qualifying projects, available funds, and cost sharing formula. This chapter also discusses recommended funding sources that match the types of proposed projects.

5.2 Funding Sources

The various funding sources applicable to San Miguel are presented in this section. For more detail on the types of funding programs, reference the technical memorandum included in Appendix G.

5.2.1 Recommended Funding Strategy

While many of the recommended projects may involve the need to leverage funding from outside the local community, the strongest applicants for leveraged funding have an established and effective local funding program.

The sections in this chapter are organized to outline first, the local funding options that the District and San Miguel can establish, and second the outside Federal and State funding options that may be accessed to "match" local funding sources and help implement projects. Because the local match is critical to accessing outside funding, it is highly recommended that the District and the lead agency[16] representing San Miguel begin to establish local funding mechanisms (even if these do not fully fund the recommended projects) in order to be more competitive for outside funds. The recommended local funding mechanisms include 1) grants, 2) taxes, 3) assessments, and 4) fees (property based and development impact). The creation of a local funding source, plus

[16] A "lead agency" to represent San Miguel and carry out the recommended drainage improvements has not been approved. The lead agency representing the community would assume control of the projects at completion. The lead agency will be responsible for gaining a preliminary level of community support for projects prior to implementing the engineering planning phase.

the potential procurement of Federal and State grants, establishes the framework for a comprehensive community funding program. This approach also acknowledges the realistic nature of public projects that no capital improvement of this magnitude can rely solely on grants.

5.2.2 LOCAL FUNDING

As discussed previously, the District is the responsible agency for programming drainage and flood control services in the County. Since the San Miguel CSD is not responsible for drainage and flood control services, the District, in the interim, may need to serve as the applicant and/or responsible agency for administering the funding options discussed in this chapter. However, the future "lead agency" will represent the community and assume responsibility for implementing the projects.

It is recommended that the San Miguel CSD amend its charter to include drainage and flood control authority to strengthen the community's ability to implement the projects recommended in Chapter 3. A brief discussion on amending the CSD's charter is presented in Chapter 6 "Implementation Strategy."

There are several options for providing funds to the communities involved in the Study. The options include grants, taxes, assessments, and fees.

5.2.2.1 Grants

The County's planning department administers Community Development Block Grants (CDBG) on a yearly basis. This program is funded by the US Department of Housing and Urban Development (HUD) and targets low to moderate-income communities. The funding for CDBG is guaranteed each year but the level of funding varies. There is no cap on grant applications, but the County is allocated approximately $500,000 on an average year from HUD.

Where CDBG funds are used to pay all or part of the cost of a public improvement, special assessments to recover the non-CDBG portion may be made provided that CDBG funds are used to pay the special assessment in behalf of all properties owned and occupied by low and moderate income persons. If the CDBG funds are not sufficient to pay the assessments in behalf of all the low and moderate income owner-occupant persons, then the CDBG funds need not be used to pay the special assessment in behalf of moderate income persons[17].

5.2.2.2 Special Taxes

Taxes are the most common means for a government to raise revenue. An existing tax can be raised, or a new tax can be levied on residents in a district to fund flood control projects. By definition, this is a special tax requiring approval from two thirds of the electorate (residents). If approved, the revenue generated would be allocated specifically for drainage and flood control projects in a district. It would be the responsibility of the district to determine where those funds would be spent.

This form of revenue requires all residents to pay the tax regardless of benefits received and the special tax formula does not need to be related to benefits received from the proposed projects. In order to establish the special tax, a district would need to develop and adopt a formula; the board of supervisors would approve placing the tax on the ballot. A special tax is approved by resident registered voters (except in the case of Mello-Roos CFD tax which can be approved by property owners in uninhabited areas). Figure 1 in Appendix G illustrates the special tax adoption process.

[17] 24CFR570.200(c) *Special Assessments Under the CDBG Program.*

5.2.2.3 Benefit Assessments

A benefit assessment is a charge levied on a property to pay for public improvements or services that benefit the property. The difference between an assessment and a tax is that benefit assessment formula must quantify the relationship between the assessment charged and the benefit received by the property (if a property does not benefit, it cannot be assessed). The application of this funding mechanism would likely limit assessments to those properties within the immediate vicinity of constructed improvements.

All new assessments must conform to the requirements of Proposition 218, which was passed in November 1996. Proposition 218 specifically requires that property owners (not registered voters) be allowed to vote on new benefit assessments. New assessments may be approved by a simple majority approval of the property owners, with votes weighted in proportion to the assessment proposed.

In order to implement a new assessment, the lead agency must define those parcels that receive benefit and define the method of assessment in a Basis of Design Report. Figure 2 in Appendix G illustrates the benefit assessment adoption process.

5.2.2.4 Property-Based Fee

A property-based user fee is a charge levied on a property to pay for public improvements or services that are used by that property. The difference between an assessment and a user fee is that assessments rely on a demonstration of special benefit (which can be hard to prove) while user's fees require demonstration of use. In the case of drainage facilities, a user fee allows an agency to collect revenue from properties that contribute runoff into the system but may not flood because of their location.

A user fee can be structured proportionally to the amount each parcel uses the flood control facilities rather than how much each property benefits from the services or improvements provided. This allows program costs to be spread over a larger customer base. For flood control work, user fees are typically related to impervious area on the property, which can be equated to runoff. Like the benefit assessment, a user fee may also be implemented by a 50% vote; however, before the vote may be initiated, a noticed protest hearing must take place and less than 50% written protest must be received.

In order to implement a new user fee, the lead agency must define those parcels that use the various drainage facilities and define its method of calculating a fee proportional to use. Figure 3 in Appendix G illustrates the user fee adoption process.

There is current legislative effort aimed at exempting storm drainage fees from the Proposition 218 balloting test. Should this effort be successful, property based fees could be established with a fee study and protest hearing, as described for the Development Impact Fee below.

5.2.2.5 Development Impact Fee

Government Code Section 66000 et.seq., allows the County to collect development fees to fund the installation of storm drain infrastructure necessary to offset the impacts of development. Development Impact Fees are tied to either General Plans or Capital Improvement Programs approved by the County. As regular updates of the General Plan and/or Capital Improvement Programs, additional storm drain infrastructure is identified to support the new developments and projects. The fees cannot be used to correct existing problems; although they can be used to fund a "fair share" of new projects. The collection of fees in lieu of the installation of curb, gutter and sidewalks in problematic locations must be approved by District Board of Supervisors as a new and separate action.

Development Impact Fees are not subject to vote. They can be approved by a majority of the Board of Supervisors or the Board of Directors after a protest hearing. Figure 4 in Appendix G illustrates the adoption process.

The implementation of a Development Impact Fee in San Miguel would benefit the community since there is available land and opportunity for growth in San Miguel. Also, redevelopment and larger remodels (improvements that exceed a certain percentage of the current property home value) could provide the nexus for collecting impact fees to correct existing problems.

5.2.2.6 Resolution 68-223: Apportionment of Costs

Resolution Number 68-223 in Appendix D includes a provision for reimbursement to a developer (and successor in interest), for constructing drainage facilities with excess capacity to accommodate runoff from adjacent properties. The normal period for reimbursement would be from five to ten years, and in no event would it exceed 20 years. If a developer constructed a storm drain facility that was sized larger than required to serve their particular project, it would be possible to reimburse the developer, or give "credit" under an impact fee system, for the excess capacity.

5.2.3 Outside (Leveraged) Funding Sources

Federal and State programs (e.g. cost sharing agreements or grants) provide an opportunity for communities to reduce the total project cost that will be funded through taxes, assessments, and fees. Grant applications often require detailed information regarding the project, the impact on the community and the environment, and project costs. Additionally, grant distributors prefer projects that provide multiple benefits including environmental restoration. Projects compete for existing funds and a majority of applications are not accepted because of this.

Once a grant is appropriated to a project, the recipient is required to complete additional paperwork including invoices, status reports, and project closeout reports. Grant management adds to the overall project costs and not all grant management costs are guaranteed to be recovered (not included as matching funding for project costs).

5.2.3.1 U.S. Army Corps of Engineers: Flood Hazard Mitigation and Riverine Ecosystem Restoration Program

Informally known as "Challenge 21," this watershed-based program focuses on identifying sustainable solutions to flooding problems by examining nonstructural solutions in flood-prone areas, while retaining traditional measures where appropriate. Eligible projects will meet the dual purpose of flood hazard mitigation and riverine ecosystem restoration.

Projects include the relocation of threatened structures, conservation or restoration of wetlands and natural floodwater storage areas, and planning for responses to potential future floods.

The Corps requires that the local sponsor[18] assist in the preparation of the planning, environmental, and design documents to ensure that the communities are involved in the project development and selection process. This requires the local sponsor to have an active role throughout the entire Corps civil works process, which can last up to seven years or more. The local sponsor is also expected to share in the cost of the project planning, design and construction (cost sharing depends on the program, but can be as high as 50 percent of the project). The local sponsor financial contribution can be in the form of in-kind service (e.g. staff time), which would offset the cash contribution requirements, but some of these costs would be in addition to the requirements defined by the

[18] A local sponsor is typically the local flood control agency or district responsible for providing drainage and flood control. Local sponsors share in the cost for planning, designing and constructing a project with the Corps.

Corps process. The local sponsor will incur project costs that are deemed ineligible and cannot be used as part of the local sponsor financial contribution. These costs are typically project management costs incurred for administrative tasks such as management of staff, preparation of invoices, etc. Refer to Appendix G for more detail on local sponsor cost sharing responsibilities for Corps sponsored projects.

The amount of structural and non-structural damage experienced by residences and business in San Miguel may not qualify as a Federal project based on the Corps' benefit to cost ratio formula. The Corps would make this determination following the completion of an Economic Analysis as part of a Feasibility Study. However, based on the delineation of the FEMA 100-year floodplain and the objective of the proposed projects to mitigate more frequent flood events (and not 100-year flood protection), it is not recommended to pursue Federal involvement for projects in San Miguel.

5.2.3.2 California Department of Transportation: Cooperative Drainage Projects

The California Department of Transportation (Caltrans) has established a process for cost sharing of drainage projects being implemented by a local agency that will benefit Caltrans facilities. Cost sharing would include the planning, design, and construction of drainage projects. The process for applying for a Cooperative Agreement is detailed in the Cooperative Agreement Manual. The cost to Caltrans is based on the benefit received from the project.

5.2.3.3 Governor's Office of Emergency Services: Flood Mitigation Assistance Program

FEMA provides funds on a yearly basis for each of the states to administer Flood Mitigation Assistance (FMA) grants. In California, the Governor's Office of Emergency Services administers these grants. The purpose of these grants is to provide local communities with funds to alleviate reoccurring flooding problems and to reduce claims on the National Flood Insurance Fund (NFIF). There are three types of grants available:

- FMA Planning Grants
- FMA Project Grants
- FMA Technical Assistance Grants

All projects that address flooding issues for areas within a Special Flood Hazard Area (SFHA)[19] are eligible for both FMA Planning and Project grants. In order to receive a FMA Project grant, a Flood Mitigation Plan (FMP) must be completed. A draft FMP has been submitted to the Office of Emergency Services (OES) for review and comment. The County anticipates an approved FMP by the end of calendar year 2004. The FMA Planning Grant can be used to fund the completion of the FMP. Refer to the Funding Assistance Technical Memorandum in Appendix G for more detail on typical grant eligibility and administrative requirements.

5.3 Recommended Funding Strategy

There are several funding opportunities available for the projects identified in this report, but the likelihood of receiving enough grant funding for all project costs is unlikely. As stated previously, the local lead agency will need to fund the planning, permitting, environmental compliance, design and construction for all projects.

The lead agency should establish local funding mechanisms (even if these do not fully fund the recommended projects) in order to be more competitive for outside funds. The recommended local funding mechanisms include development impact fees, assessments, cost sharing agreements and grants.

[19] Any area within the 100-year flood plain as defined by FEMA is within a SFHA.

Development Impact Fee

The County or the lead agency should collect fees on new development, redevelopment and larger remodels to fund the installation of storm drain infrastructure necessary to offset the impacts of development.

Benefit Assessments

The proposed project to mitigate flooding between Mission Street and the railroad will benefit the entire community of San Miguel. A traffic study was not conducted as part of this study, however, Mission Street is the primary north to south corridor through San Miguel and, most likely, all residences travel along Mission Street and are impacted negatively by flooding. The benefit assessment formula would assume that all property owners in San Miguel receive benefit from relieving flooding caused by the railroad barrier. If Project 1 is coupled with the Mission Street Design Plan improvements, then the argument that the entire community benefits is strengthened. This allows program costs to be spread over the entire community customer base.

For Project 1, a benefit assessment is proposed over a property-based fee because an assessment requires a demonstration of special benefit, while user's fees require demonstration of use. All residents that live east of the railroad tracks do not contribute runoff to the Mission Street flooding. It would be difficult or impossible to demonstrate the amount each parcel uses the proposed storm drains. However, it could be demonstrated that the parcels benefit from the improvements.

Property Based Fee

To fund the construction of Project 3, a property-based user fee may be more appropriate than an assessment fee and would also be easier to prove since a user fee allows an agency to collect revenue from properties that contribute runoff into the system, but may not flood because of their location. The user fee could be structured proportionally to the amount each parcel uses the flood control facilities, rather than how much each property benefits from the services or improvements provided. The user fee could be related to impervious area on the property, which can be equated to runoff. Higher elevation properties west of L Street that may not flood would assist in funding the downstream curb and gutter conveyance system.

California Department of Transportation: Cooperative Drainage Projects

Caltrans will cost share projects implemented by a local agency that benefit Caltrans facilities. However, the projects proposed for San Miguel do not mitigate flooding on Highway 101. The argument for involving Caltrans in these projects is that the highway facilities concentrate and discharge runoff directly onto community streets. Caltrans failed to provide drainage facilities that divert runoff away from public streets, and therefore contribute partially to the existing problems in San Miguel.

Community Development Block Grants

The County's planning department administers CDBG on a yearly basis. The funding for CDBG targets low to moderate income communities[20]. San Miguel currently qualifies for the funding (based on meeting one of the three national objectives as described in the Funding Technical Memorandum in Appendix G) and it could be used to partially fund the construction of flood protection projects. CDBG funds can be used for planning, design, or construction of a project, however, the County planning department's preference is that a project have plans and specifications completed prior to paying out funds. While matching funds are not required, the County looks most favorably on projects with a matching fund component.

[20] Personal communication with Mr. Tony Navarro, Planner III, with San Luis Obispo County. San Miguel meets the criteria for the national objectives and qualifies for CDGB assisted activities. Based on year 2000 census data.

CHAPTER 6 IMPLEMENTATION STRATEGY

Chapter Synopsis: This chapter consists of the implementation strategy for constructing the drainage and flood control improvements. Recommendations are based on the projects discussed in Chapter 3. The preferred projects were determined by evaluating the different alternatives, ease of construction, and conformance with the community's design plan.

6.1 Local Control versus District Control

The most effective approach to improving drainage and flooding problems in each community is to identify the problems and then create a local entity to implement the solutions to solve those problems. The role of the District is to determine the improvements necessary to reduce flooding, and then to assist the individual communities in implementing programs to improve flood protection.

The District will use its general funds to provide planning and programming assistance, so that local areas of benefit within the County can better understand the significant drainage problems they are facing and determine how those problems should be solved. However, the general property tax allocation provides the District with only about $550,000 per year in revenue. The District does not possess the programs, funds or staffing to address all the on-going flooding and drainage problems in the County.

Proposed Projects 1 and 3 totaled approximately $5.7 million. If the lead agency in San Miguel established a funding source, approximately $400,000 per year, which equates to approximately $800 per parcel per year, would have to be generated by the community in order to build all the projects and pay off a municipal bond[21].

The success of any project depends on the agreement between the District and the local agency advocating the project. In order for a project to proceed, it must be accomplished in a cooperative manner and must have property owner support.

6.1.1 SAN MIGUEL COMMUNITY SERVICE DISTRICT

The San Miguel CSD board of directors was identified by the County Board of Supervisors to serve as the community representative for the duration of the study. It is recommended that the CSD continue as the representative and assume the role as lead agency for implementing the drainage projects. However, since drainage was not included in the original petition when the San Miguel CSD was formed, the charter lacks the provision for providing drainage services. The first step in establishing the CSD as the lead agency is to amend the charter to include drainage services. An election (simple majority) would be held to approve modification of the charter. The CSD would then submit a resolution of request to LAFCo to change its powers following voter approval. LAFCo would conduct a hearing and may act on the request after the hearing.

The District would work directly with the CSD in implementing the proposed projects. The remainder of the implementation discussion identifies the San Miguel CSD as the "lead agency".

6.2 Implementation Approach and Schedule

The phasing of storm drain projects would depend on the citizens' desire to implement projects, development of residential housing, the implementation of the Mission Street Design Plan and the Community Design Plan. Not all alignments proposed in Project 1 or all curbs and gutters in Project 3 need to be constructed simultaneously. Since the development plans for San Miguel may not reach full build out for the next 20 years, this study adopted a broad approach to outline plans and schedules for implementing the projects. Various development

[21] Assumes a municipal bond rate of 5 percent, paid off over a period of 25 years. Also assumes that approximately 500 parcels in San Miguel would be assessed to pay for the improvements.

projects would trigger the implementation of the storm drains proposed in Project 1. For example, construction of improvements from the Mission Street Design Plan would initiate the design and construction of the River Road storm drain alignment. The 16th Street storm drain alignment would be implemented in conjunction with the proposed residential development west of Mission Street and north of 21st Street. Therefore, this report presents a conceptual schedule for implementing the projects, versus a calendar of milestones.

6.3 Future Developments Role in Drainage

Incorporating future developments in the solutions of drainage problems is a key component of this drainage plan. The County requires that new developments include a drainage component. Two recently approved subdivisions (Tract 1840 and 2136) in the northeast portion of San Miguel constructed storm drains from their subdivisions to the Salinas River. **An opportunity existed to couple the two storm drains from the subdivisions into one large storm drain in 16th Street to serve both developments, and existing residences living west of Mission Street.** As stated in Chapter 3, supplemental capacity to serve existing and future development upstream of Mission Street could easily have been incorporated into the design. The potential for increased residential and commercial development provides an opportunity to increase capacity of new drainage facilities to serve existing customers. The County's Planning Department should seize these opportunities, work with the District and developers to plan projects that benefit the entire community. District Resolution 68-223 established policy for distributing costs of drainage projects and allows for reimbursement of developers for constructing facilities with excess capacity. However, the lead agency for San Miguel must formalize a procedure for collecting "buy-in" fees and reimbursing developers.

A proposed 120 unit subdivision north of 21st Street and west of L Street may provide an opportunity for the developer and County to construct a drainage facility that serves the subdivision and also mitigates existing flooding problems. Insufficient information on the proposed development existed at the time of writing this report, therefore, drainage facilities from the proposed subdivision could not be incorporated into this plan.

The additional cost for installing a larger pipeline would be recovered when upstream users paid a buy in fee for connecting to the downstream facilities. The County or responsible lead agency would need to establish an appropriate buy in fee to reimburse the developer.

6.4 Curb and Gutter Discussion

The most severe flooding in San Miguel occurs at River Road, between Mission Street and the Railroad. A traditional storm drain system is the most feasible alternative for mitigating this flooding. A few residents reported flooding of homes, but in general, few responses were received for the residential neighborhoods and the types of flooding reported were minor, nuisance problems. The installation of curbs and gutters should correct the majority of problems experienced in San Miguel. However, the reason the lead agency or community may choose to defer or eliminate the curb and gutter element in all projects is that the cost for building a continuous system may exceed the benefit gained by each property owner. The few responses received indicate that, in general, drainage issues on residential properties are not perceived as major problems. Mitigating the flooding problem between Mission Street and the railroad may be sufficient for the community.

If curbs and gutters are included in all projects, then from an implementation perspective, there is benefit to planning and designing a complete system for all zones, instead of segmenting the projects by entire streets or blocks. The benefits of a complete system include:

- One consistent set of design criteria is established
- One environmental document is prepared
- Cumulative impacts can be assessed and mitigated prior to construction
- Master design for community is developed

If each home owner or a collection of owners on a street is responsible for implementing improvements, then little or no coordination will exist and the likelihood of a comprehensive functioning system being implemented is minimized.

From a construction perspective, there is also financial benefit to constructing the entire curb and gutter system as one project, versus segmented individual projects. Significantly lower unit costs are obtainable on a larger project, when compared to the same total size of smaller, individual projects.

6.5 Mission Street and River Road Project

Addressing the shallow flooding that occurs adjacent to Mission Street and the railroad, between 12th and 16th Street (as shown in Figure 2 of Appendix A) would mitigate the majority and most severe flooding in the community. This project includes storm drain laterals to route runoff from Mission Street to complement the proposed enhancements in the Mission Street Design Plan. Therefore, it is recommended that the first step of the drainage plan be the design and construction of the 36 and 48-inch diameter River Road drainage pipeline. Curbs and gutters for Zone D, a majority of Zone F (see Figure 4 of Appendix A) could then be constructed since a storm drain to convey runoff would be available. This project would serve nearly 50 percent of the community. Construction of the curbs and gutters could be phased in anytime following the completion of the storm drain. For the purposes of the implementation discussion, it is assumed that the curbs and gutters would be constructed along with the drain pipe.

This type of project can best be implemented using local benefit assessment, property based fee, CDBG and Caltrans funding. Implementation steps are outlined below.

6.5.1 Implementation Steps

6.5.1.1 San Miguel CSD Amends Charter

The San Miguel CSD amends its charter to provide drainage services to the community.

6.5.1.2 SMCSD Requests District to Prepare a Basis of Design Report

The San Miguel CSD would serve as the lead agency representing the community and would assume control of the project at completion. The San Miguel CSD will be responsible for gaining a preliminary level of community support for projects prior to implementing the engineering planning phase.

6.5.1.3 San Miguel CSD Prepares Basis of Design Report

The CSD would fund and complete a Basis of Design Report within 12 months of start. The Basis of Design Report would include a description of the existing problem, proposed alternatives, recommended project, preliminary alignments, potential environmental impacts, and cost estimates.

Based on the engineering analysis, project cost estimates will be developed to determine the appropriate funding mechanism to construct and maintain the completed project. The cost estimates will continue to be refined and the level of accuracy will improve during the design phase. The Basis of Design Report should provide cost information in sufficient detail to initiate benefit assessment proceedings.

6.5.1.4 Caltrans Cooperative Agreement

Every effort should be made to identify cooperative features as early as possible in the project development stage. Upon conception of a cooperative project, Caltrans and the lead agency should enter into an agreement as soon as possible to outline understandings as to responsibilities for the various phases of project development to be performed. A formal agreement should always be executed prior to incurring any costs for design environmental studies, right-of-way activities, reviews, etc.

Caltrans may request assurance that adequate funding exists prior to entering an agreement. Coordination should begin during the preparation of the Basis of Design Report, however, the agreement will likely not be signed until a benefit assessment is passed or other adequate funding source is identified.

6.5.1.5 Conduct Benefit Assessment Proceedings for Drainage Pipeline

The CSD would conduct a benefit assessment proceeding for the properties that benefit from the improvements. It is assumed that the entire community would benefit from mitigating flooding along Mission Street. The benefit assessment would be in place prior to moving forward with permitting, environmental compliance, and design. Property owner support is imperative to the success of this project. Without support, the project will not proceed beyond the preparation of a Basis of Design Report.

If approved, the benefit assessments would be used to secure bonds that finance a portion of the project construction. Bonds are typically sold shortly after the project construction bids are received. Under most assessment proceedings, property owners are given the option to either pay-off the principal amount of their assessment prior to bond sale or to finance the assessment over time at the bond rate and term. Currently, rates for municipal bonds are on the order of 5 to 5.5 percent and terms are typically 20 to 25-years.

6.5.1.6 Property Based Fee for Curbs and Gutters

A property-based user fee may be more appropriate than an assessment fee and would also be easier to prove since, in the case of drainage facilities, a user fee allows an agency to collect revenue from properties that contribute runoff into the system, but may not flood because of their higher elevation location. The user fee could be structured proportionally to the amount each parcel uses the curb, gutter and appurtenant facilities, rather than how much each property benefits from the services or improvements provided. The user fee could be related to impervious area on the property, which can be equated to runoff.

If approved, the property-based fee could be used to secure Certificates of Participation ("COPs") that finance a portion of the project construction. COPs are similar to bonds and are typically sold shortly after the project construction bids are received. COPs typically do not provide provisions for principal payoff, hence the property-based fee is set to cover the costs of both principal and interest. Currently rates for COPs are similar to those described for municipal bonds.

6.5.1.7 Design Project, Prepare Environmental Documents and Permits

If the community supported the project by approving a benefit assessment, then the CSD would proceed with designing the project, preparing the appropriate environmental document and securing resource agency permits to construct the project. The duration for the design and environmental documentation process is approximately 12 months from the approval of a benefit assessment.

6.5.1.8 Apply for CDBG Funds

CDBG funds can be used for planning, design, or construction of a project, however, the County planning department's preference is that a project have plans and specifications completed prior to paying out funds[22]. While matching funds are not required, the County looks most favorably on projects with a matching fund component. In this case, the benefit assessment and property based fee would provide the matching fund component. If the construction is phased over two seasons (e.g. first season-storm drain, second season-curb and gutter improvements), then CDBG funds could be applied for in two consecutive years. Funds are distributed in August of each year and applications are typically due October of the previous year. CDBG funds

[22] Personal communication with Tony Navarro, Planner III, San Luis Obispo County, January 30, 2003.

can be used to pay the special assessment in behalf of all properties owned and occupied by low and moderate income persons.

6.5.1.9 Advertise for Construction

The CSD would advertise the project and oversee construction. It is assumed that the storm drain would be constructed in the first phase, while the curb and gutter improvements would be constructed in the second phase.

6.5.2 Cost Estimate

The total project cost for the highest priority recommended project (River Road storm drain), curb and gutter improvements is approximately $2.06 million. Table 6-1, below, breaks out this estimate.

Table 6-1: Mission Street and River Road Project Cost Estimate

ALTERNATIVE	COST ($)
River Road 36 and 48-inch Storm Drain	1,520,000
Zone D Curb and Gutter	360,000
Portion of Zone F Curb and Gutter	176,000
Total	**2,056,000**

6.5.2.1 Local Cost Share

This section is included for discussion purposes only and will likely be revised as cost estimates are refined and grants are awarded.

In order to determine the local cost share of the proposed projects, simplifying assumptions regarding CDBG funding must be made.

- Assume Caltrans funds 25 percent of River Road storm drain. 25 percent is equivalent to the percent contribution of runoff that originates west of Highway 101 that flows through the community. Caltrans contribution is structured proportionally to the amount of runoff that is discharged from its culverts during a 10-year rain event (i.e. how much of the pipeline is "used" by Caltrans runoff). Caltrans would contribute approximately $380,000[23] following these assumptions.
- Assume CDBG funds $100,000 over two year construction ($50,000 per year)

Based on these simplifying assumptions, the local cost share to be funded via a benefit assessment and property based fee could exceed $1.58 million.

6.5.3 Schedule for Improvements

Instead of approximating completion dates for the implementation steps discussed above, an estimated timeframe for each milestone was developed. In order to establish a completion date, add the cumulative durations to the initiation of the project. The timeframes are shown in Table 6-2. The total duration is approximately five to six years.

6.5.4 Curb and Gutter Option

If the community and lead agency choose to construct only the River Road storm drain, then the project cost is approximately $1.52 million.

[23] 25 percent of $1,520,000 is approximately $380,000.

Table 6-2: Forecast Duration

MILESTONE	DURATION
San Miguel CSD takes Lead Agency Role	6 months
Lead Agency Prepares Basis of Design Report	12 months
Benefit Assessment Election [1]	6 months
Caltrans Cooperative Agreement [1]	6 to 9 months
Design [2]	9 months
CEQA/ Resource Agency Permits [2]	12 to 21 months
Approvals and Advertise for Construction	4 months
Construct Storm Drain Pipeline	7 months
Construct Curbs and Gutters	12 months
Total	**~ 5 to 6 years**

Notes:
1: Benefit assessment election and Caltrans agreement occur concurrently
2: Design and CEQA occur concurrently. Resource agency permit duration depends on whether outfall is located beneath ordinary high water of the Salinas River and findings of habitat assessment

6.6 16th Street Project

This drainage line would provide conveyance for runoff from proposed development in the northern portion of the community and would intercept runoff from existing development that currently flows towards the Mission Street central district. It is recommended that this project be prioritized after the River Road alignment. Curbs and gutters for Zones B and E (see Figure 4 of Appendix A) could then be constructed. Construction of the curbs and gutters could be phased in anytime following the completion of the 30 and 48-inch diameter storm drain in 16th Street. For the purposes of the implementation discussion, it is assumed that the curbs and gutters would be constructed along with the drain pipe.

6.6.1 Implementation Steps

The implementation steps discussed in Section 6.5.1 apply to the 16th Street Project, with the exception that amending the San Miguel CSD charter would not be repeated.

6.6.1.1 Developer Participation

The lead agency is encouraged to involve the proposed sub-division north of 21st Street in planning the project to provide drainage services. At this time, there is no information on the developer's proposed drainage plan. The developer may select to manage all runoff on-site (e.g. an on-site detention basin), however, if the drainage plan includes conveying the runoff via a storm drain to the Salinas River, then the recommended option to benefit the community is to construct the storm drain in 16th Street to conform with this drainage plan. The developer would be requested to design the pipeline with supplemental capacity to convey runoff from future development and existing residences. The additional cost for installing a larger pipeline would be recovered when upstream users paid a buy in fee for connecting to the downstream facilities. The lead agency would need to establish an appropriate buy in fee to reimburse the developer.

The County's planning department should explore this option with the developer, and the District or lead agency should advocate this proposal as a betterment for the entire community.

6.6.2 Cost Estimate

The total project cost for the proposed 16th Street storm drain, curb and gutter improvements is approximately $1.67 million. Table 6-3, below, breaks out this estimate. The cost estimate does not account for potential reduction in costs if a developer were to design and construct the pipeline.

Table 6-3: 16th Street Project Cost Estimate

ALTERNATIVE	COST ($)
16th Street 30 and 48-inch Storm Drain	1,477,000
Zone B Curb and Gutter	64,000
Zone E Curb and Gutter	127,000
Total	**1,668,000**

6.6.2.1 Local Cost Share

A similar assumption regarding CDBG funds could be applied to the 16th Street Project also. More importantly, even with the possibility of securing this grant, the local community will be expected to absorb a majority of the project costs since no other funding sources are available.

- Assume Caltrans funds 25 percent of 16th Street storm drain. 25 percent is equivalent to the percent contribution of runoff that originates west of Highway 101 that flows through the community. Caltrans would contribute approximately $369,000[24] following these assumptions.
- Assume CDBG funds $100,000 over two year construction ($50,000 per year)

Based on these simplifying assumptions, the local cost share to be funded via a benefit assessment and property based fee could exceed $1.2 million.

6.6.3 Schedule for Improvements

The estimated timeframe for each milestone is similar to the durations discussed in Section 6.5.3 and summarized in Table 6-2. The exception is that the first step of amending the CSD charter will not be conducted a second time. The total duration is approximately four to five years.

6.6.4 Curb and Gutter Option

If the community and lead agency choose to construct only the 16th Street storm drain pipeline, then the project cost is reduced to approximately $1.48 million.

6.7 11th Street Project

This drainage line would provide conveyance for runoff primarily from existing residences and businesses west of Mission Street and south of 11th Street. Existing residences living along 11th Street east of the railroad tracks would also use this storm drain. Based on the John L. Wallace & Associates Water System Master Plan figures for the San Miguel CSD (no date provided) it appears that residential development is proposed east of Mission Street, near 11th Street. Field investigations revealed that a parcel on the east end of 11th Street was recently graded and trenched at the location shown in Figure 5 of Appendix A. It appeared that a storm drain from the subdivision to the Salinas River was constructed, however, access to the site was limited and the presence of a storm drain was difficult to confirm. Photograph 7 in Appendix B shows the new subdivision on the eastern side of 11th Street.

It is recommended that the 11th Street project be prioritized after the 16th Street alignment is completed. Curbs and gutters for Zones H and portions of Zone F (see Figure 4 of Appendix A) could then be constructed.

[24] 25 percent of $1,477,000 is approximately $369,000.

Construction of the curbs and gutters could be phased in anytime following the completion of the 36-inch diameter storm drain in 11th Street. For the purposes of the implementation discussion, it is assumed that the curbs and gutters would be constructed along with the drain pipe.

6.7.1 Implementation Steps

The implementation steps are similar to the 16th Street project steps described in section 6.6.1.

6.7.1.1 Developer Participation

The County's planning department should continue to explore opportunities where proposed development benefits both new and existing residents in San Miguel.

6.7.2 Cost Estimate

The total project cost for the proposed 11th Street storm drain, curb and gutter improvements is approximately $1.63 million. Table 6-4, below, breaks out this estimate.

Table 6-4: 11th Street Project Cost Estimate

ALTERNATIVE	COST ($)
11th Street 36-inch Storm Drain	1,252,000
Zone F Curb and Gutter	88,000
Zone H Curb and Gutter	294,000
Total	**1,634,000**

6.7.3 Schedule for Improvements

The estimated timeframe for each milestone is similar to the durations discussed in Section 6.5.3 and summarized in Table 6-2. The exception is that the first step of amending the CSD charter will not be conducted a second time. The total duration is approximately four to five years.

6.7.4 Curb and Gutter Option

If the community and lead agency choose to construct only the 11th Street storm drain pipeline, then the project cost is reduced to approximately $1.25 million.

6.8 12th Street Drainage Ditch

This is the lowest priority project because the ditch would drain a small watershed and the area should remain fairly undeveloped based on its current Residential Suburban land use designation. Compared to an underground pipeline, a ditch would be an economical way to collect and convey storm water runoff. If the surrounding residential suburban land use becomes more urbanized, then the ditch should be replaced with a pipeline. The ditch would convey runoff for the residents living east of N Street, along 12th Street.

6.8.1 Implementation Steps

The implementation steps are similar to the 16th Street project steps described in section 6.6.1.

6.8.1.1 Developer Participation

The County's planning department should continue to explore opportunities where proposed development benefits both new and existing residents, especially if this area is rezoned from Residential Suburban to Residential Single or Multiple Family to accommodate growth.

6.8.2 Cost Estimate

The total project cost for the proposed drainage ditch is approximately $300,000. Table 6-5, below, breaks down this estimate.

Table 6-5: 12th Street Project Cost Estimate

ALTERNATIVE	COST ($)
12th Street Drainage Ditch	303,000
Total	**303,000**

6.8.3 Schedule for Improvements

An estimated timeframe for each milestone was developed and is summarized in Table 6-6. The total duration is approximately three to three and a half years.

Table 6-6: Forecast Duration

MILESTONE	DURATION
Lead Agency Prepares Basis of Design Report	6 months
Benefit Assessment Election	6 months
Design [1]	9 months
CEQA/ Resource Agency Permits [1]	12 to 18 months
Approvals and Advertise for Construction	4 months
Construct Storm Drain Pipeline	6 months
Total	**~ 3 to 3.5 years**

Notes:
1: Design and CEQA occur concurrently. Resource agency permit duration depends on whether outfall is located beneath ordinary high water of the Salinas River and findings of habitat assessment

REFERENCES

1. San Luis Obispo County Department of Public Works, "San Luis Obispo County Flood Protection and Drainage Policies, Programs, Permitting and Funding," April 17 2001
2. Department of Planning and Building, County of San Luis Obispo, "San Miguel Community Design Plan", Public Hearing Draft, January 2003
3. John L. Wallace & Associates, "Water System Master Plan", Figures 1 through 5, (no date provided)
4. San Luis Obispo County Code-Title 22, Land Use Ordinance
5. Caltrans As-Built Drawings showing drainage structures in San Miguel (various, no dates available)

Appendix A

FIGURES

APPENDIX A

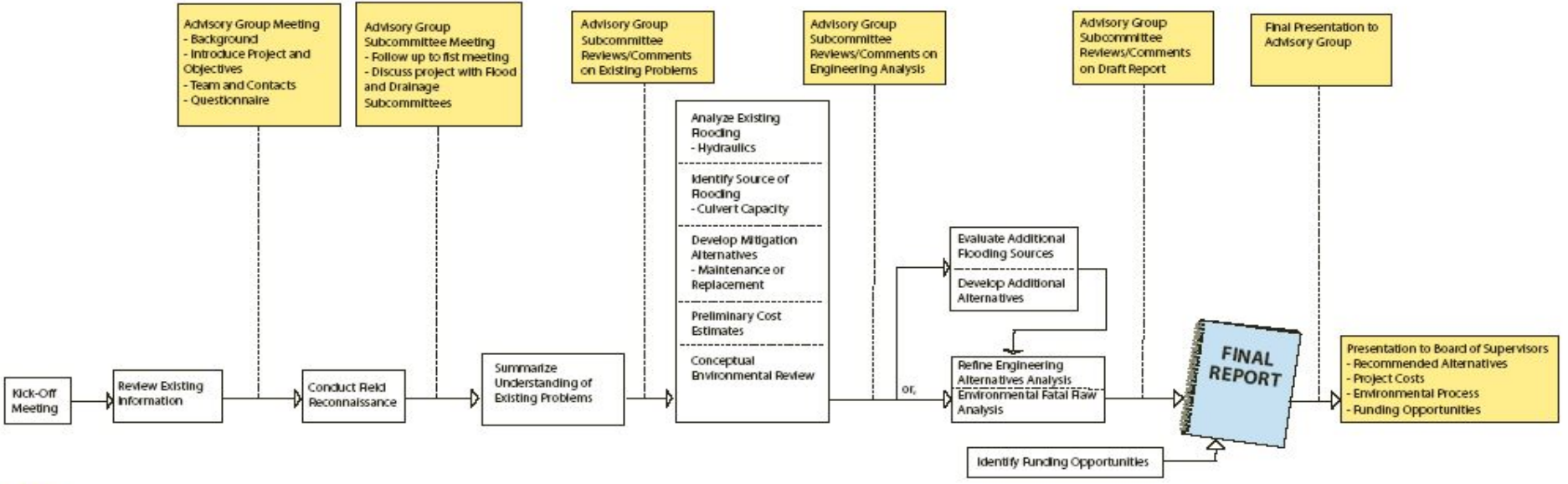
FIGURES

COUNTY OF SAN LUIS OBISPO

Community Drainage and Flood Control Studies

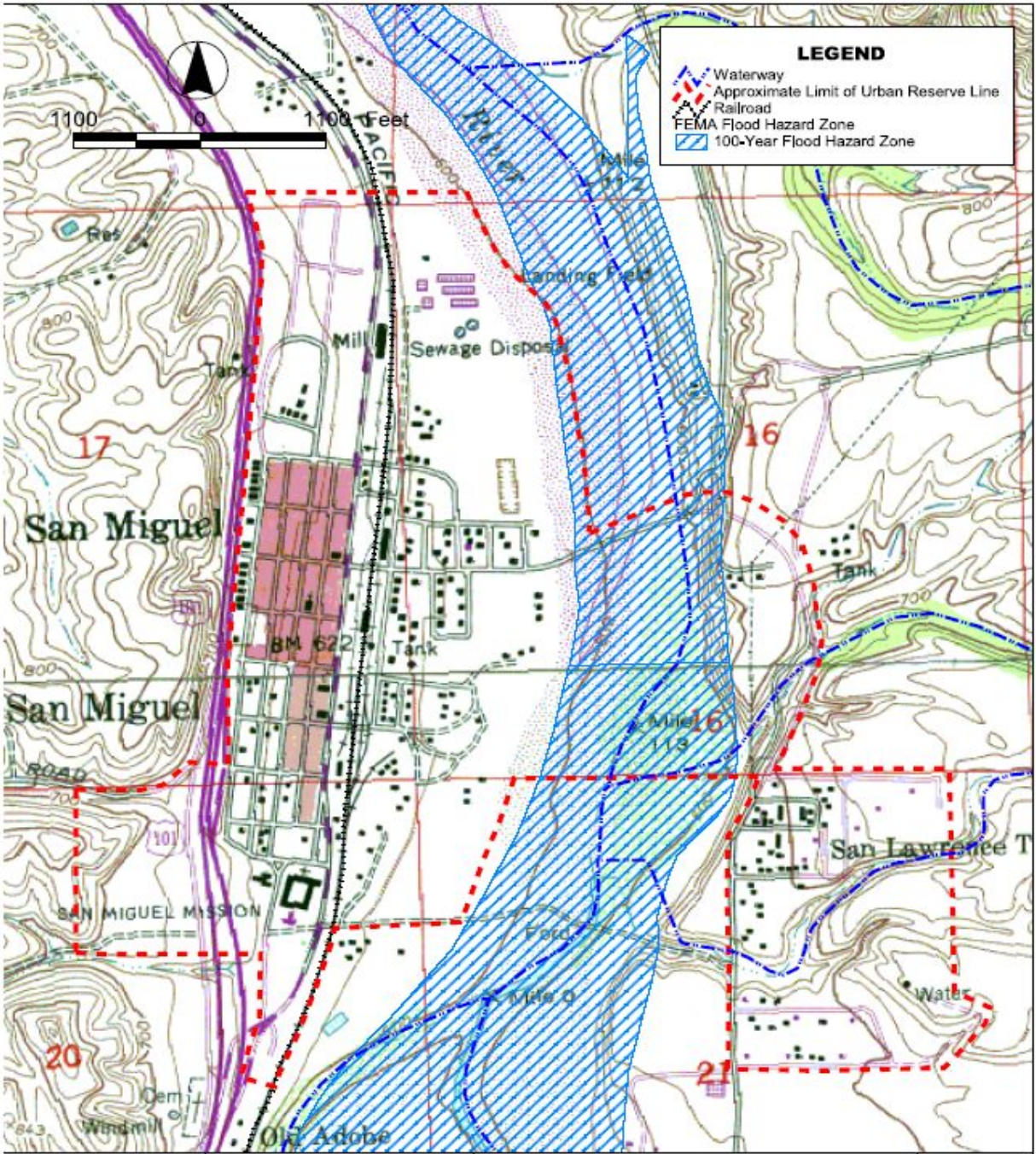
Cambria, Cayucos, Nipomo, Oceano, San Miguel and Santa Margarita

Study Flow Chart



RMC

Date: 3/19/03 Drawn: KOW Appr'd: ST Path: Z:\2001\210176\San Miguel	QUESTA ENGINEERING CORP Modified by RMC July 2003	**AREAS OF REPORTED FLOODING** SAN MIGUEL, CALIFORNIA	Appendix A **2**



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QUESTA ENGINEERING CORP

Modified by RMC April 2003

FEMA FLOOD HAZARD ZONE

SAN MIGUEL, CALIFORNIA

Appendix A

3

Modified by RMC April 2003

Date:	03 / 19 / 03
Drawn:	C.H.H.
Appvd:	S.T.
Dwg. No:	21176-SMiguelTopo.DWG

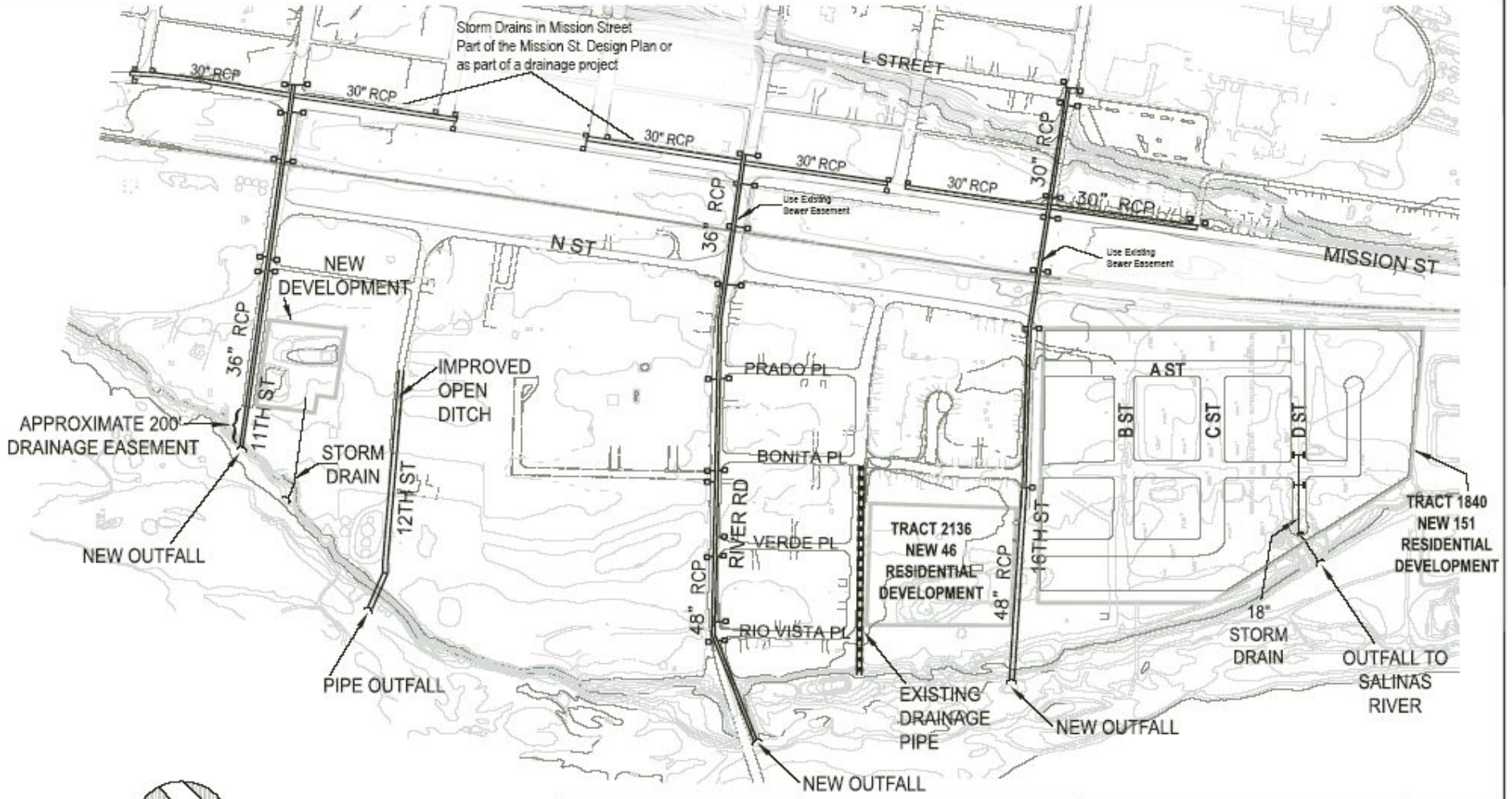
QUESTA ENGINEERING CORP. — Civil, Environmental & Water Resources

DRAINAGE ZONES AND FLOW DIRECTIONS

SAN MIGUEL, CALIFORNIA

Appendix A

4



Modified by RMC July 2003

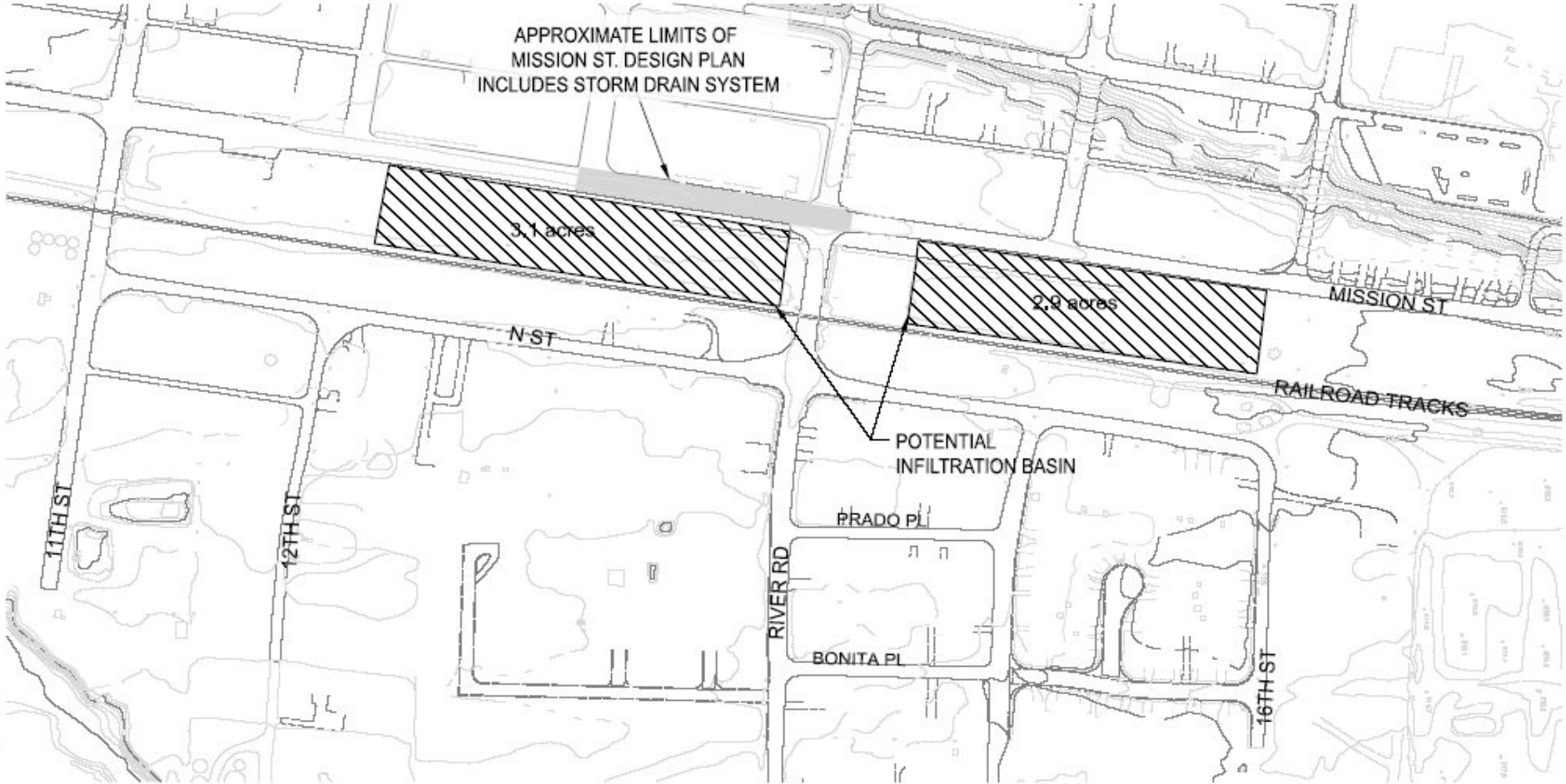
Date:	03 / 19 / 03
Drawn:	C.H.H.
Appr'd:	S.T.
Dwg. No:	21176-SMiguelTopo.DWG

QUESTA ENGINEERING CORP.
Civil Environmental & Water Resources
P.O. Box 70356 1220 Bridgeyard Cove Road Point Richmond, CA 94807

Modified by RMC December 2003

San Miguel
Drainage and Flood Control Study
Proposed Underground Storm Drain System

Appendix A
5



0' 200' 100' 400'
SCALE: 1" = 200'

Modified by RMC July 2003

Date:	03 / 19 / 03
Drawn:	C.H.H.
Appr'd:	S.T.
Dwg. No:	21176-SMIguelTopo.DWG

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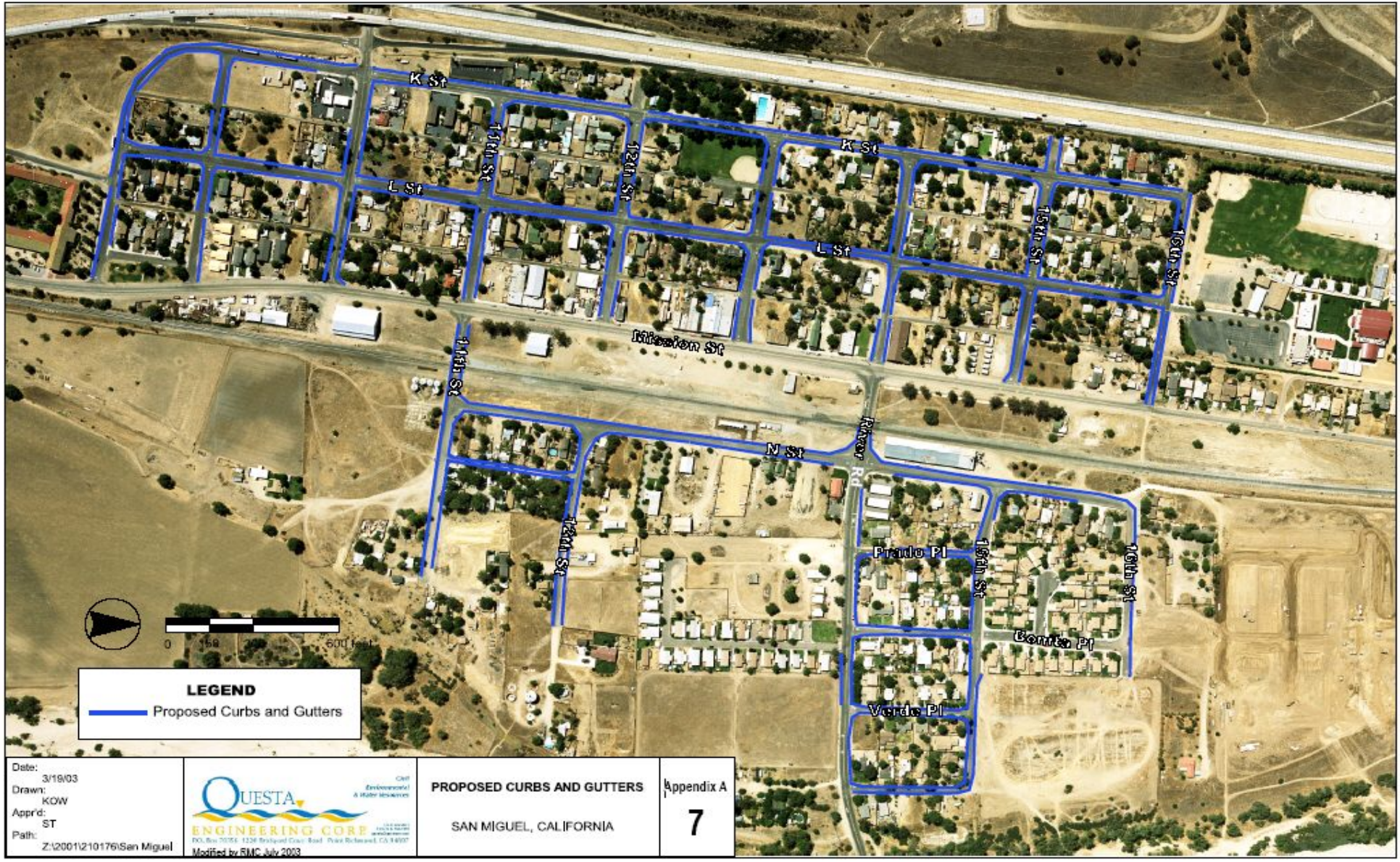
Civil Environmental & Water Resources
P.O. Box 70356 1220 Bridgeyard Cove Road Point Richmond, CA 94807

DETENTION AND INFILTRATION BASINS
SAN MIGUEL, CALIFORNIA

Appendix A
6



Date: 3/19/03 Drawn: KOW Appr'd: ST Path: Z:\2001\210176\San Miguel	QUESTA ENGINEERING CORP Civil Environmental & Water Resources Modified by SMC July 2003	PROPOSED CURBS AND GUTTERS SAN MIGUEL, CALIFORNIA	Appendix A 7

Appendix B

PHOTOGRAPHS

APPENDIX B

PHOTOGRAPHS

Photograph 1: Mission Street between 13th and 14th Street

This reach of Mission Street is scheduled to receive enhancements. The long range plan for San Miguel identifies this area the "City Center".

Photograph 2: Tract 1840 development looking east on 16th Street

The photograph was taken looking east on 16th Street in the new development. This development is being built with curb and gutters, and a drainage pipe that conveys runoff from this development to the Salinas River.

Photograph 3: 11th Street looking west towards the railroad and Mission Street

Construction of a pipeline in 11th Street would likely require bore and jack installation methods to cross under the railroad.

Photograph 4: River Road looking west towards railroad

It is recommended that the River Road alignment be the first constructed to relieve flooding in the downtown area and to complement the proposed enhancements from the Mission Street Design Plan.

Photograph 5: River Road looking east towards the Salinas River

Typical curb and gutter placement patterns in San Miguel. Newer developments east of the Mission Street were built with curbs and gutters.

Photograph 6: Intersection of 16th and Mission Street looking west

No presence of curbs and gutters in residential neighborhoods west of Mission Street.

Photograph 7: New subdivision off 11th Street (photo taken in February 2003)

The new subdivision appeared to have a storm drain that will convey runoff from the subdivision to the Salinas River. The storm drain was not located in 11th Street.

Appendix C

COMMUNITY QUESTIONNAIRE AND RESPONSES

APPENDIX C

COMMUNITY QUESTIONNAIRE AND RESPONSES

COMMUNITY DRAINAGE AND FLOOD CONTROL STUDY QUESTIONNAIRE

San Miguel

Why should I complete this questionnaire? We need your help in identifying existing flooding problems in San Miguel. We will use this questionnaire to 1) gather local knowledge of the location and severity of existing drainage and flood problems, and 2) identify likely causes. Your time and effort is appreciated?

Please complete this questionnaire and return it in the enclosed self addressed envelope, so we can address all your community's problems as comprehensively as possible. A map of your community is on the reverse side of this form. Please use it if it will assist you in locating or describing problems to us. *We will not be able to respond to each person individually submitting a questionnaire, but your response will enable us to evaluate your specific concern, assure we are aware of all drainage problems in your community, and possibly develop specific solutions depending on the location and type of drainage problem which exists.*

Contact Information (optional):

Name:	
Address:	
Phone Number:	
Email:	

Where have you experienced or observed flooding? Please provide the amount of flooding (e.g. a few inches, 1 foot, severe), the location, year and observed damage to homes or property. A map is provided for you to indicate the location. Photographs of the flooding would be very helpful to us.

How often does the flooding you observed occur? Every time it rains, once a year, once every five years, once in my lifetime.

Did you observe likely causes of the flooding, such as clogged culverts under roads, catch basins filled with dirt, no place for water to flow?

Are there any other comments regarding drainage and flooding that you would like to make?

	Property Address	Comment
	Within Study Area	
1	Corner of 10th and L Street	Street runoff overflows onto property and floods residence
2	Property on east end of 11th Street	Drainage problems
3	Mission Street between 12th and 13th Street	Businesses flood during heavy rains
4	River Road and intersections with Prado, Bonita and Verde	Intersections flood during moderate and heavy rains
5	Between tracks and former hotel	Periods of heavy rain cause flooding on street between railroad tracks and former hotel.
	Remote Area Location	
6	Airport Road at Estrella	No place for water to flow due to heavy accumulation of sand in river bed at intersection with Airport Road

Appendix D

RESOLUTION ESTABLISHING POLICY

APPENDIX D

RESOLUTION ESTABLISHING POLICY

BEFORE THE BOARD OF SUPERVISORS

of the

SAN LUIS OBISPO COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT

Mon day May 20, 1968

PRESENT: Supervisors M. Roland Gates, Elston L. Kidwell, Fred C. Kimball, Lyle F. Carpenter, and Chairman Hans Heilmann

ABSENT: None

Resolution No. 68-223

RESOLUTION ESTABLISHING POLICY OF THE SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT RELATING TO THE APPORTIONMENT OF LOCAL COSTS OF PLANNING, DESIGN, CONSTRUCTION, OPERATION AND MAINTENANCE OF DRAINAGE AND FLOOD CONTROL FACILITIES

The following resolution is now offered and read:

WHEREAS, the San Luis Obispo County Water Resources Advisory Committee has proposed the adoption of a policy relating to the apportionment of local costs of planning, design, construction, operation and maintenance of drainage and flood control facilities by letter dated May 8, 1968.

NOW, THEREFORE, BE IT RESOLVED AND ORDERED by the Board of Supervisors of the San Luis Obispo County Flood Control and Water Conservation District, State of California, that the following shall be the policy of the San Luis Obispo County Flood Control and Water Conservation District relating to the apportionment of local costs of planning, design, construction, operation and maintenance of drainage and flood control facilities until further notice:

1. The San Luis Obispo County Flood Control and Water Conservation District shall maintain surveillance of water problems throughout the County and advise the landowners of present or potential drainage problems in the areas where found. Where remedial action is deemed necessary, the Board of Supervisors shall call an informal hearing for the purpose of informing property owners in the areas causing the problem and in the areas of damage or potential damage.

2. If a program of correction is indicated, the Board of Supervisors shall provide assistance in the formation of a suitable zone of the County Flood Control District. Once a zone has been formed, it shall bear the cost of the planning, design, construction, financing and maintenance of drainage facilities. If the zone is formed, the cost of formation of the zone should be reimbursed from the initial budget of the zone. If the zone formation proposal is rejected, or otherwise abandoned, then the cost of the zone formation proceedings should be absorbed by the County Flood Control District.

3. Applications for the formation of a drainage district or zone should be discussed with the County Hydraulic Engineer so that the applicants will have available to them all current and pertinent information for their guidance.

4. Provision should be made for reimbursement to a developer, or his successors in interest, of his costs of off-site drainage facilities in excess of his pro-rata share, as determined by the County of San Luis Obispo, when adjoining properties develop and require the use of facilities financed by said developer. The period of eligibility for reimbursement should be flexible and based on the size of a project. It is anticipated that the normal period of reimbursement would be from five to ten years and in no event would it exceed 20 years.

5. The Board of Supervisors shall maintain a revised project priority list, giving preference to those projects approved by the people within the areas affected, in the order of approval.

6. Local costs of drainage projects should be spread within the area of benefit in accordance with benefits received, insofar as possible. Where pay-as-you-go financing or general obligation bond financing is contemplated, the total assessed valuation is an equitable basis for spreading project costs under the assumption that benefits are in accordance with assessed valuation. Where assessment bond proceedings are contemplated, and only in such cases, land area, front or abutting footage, number of developable sites, as well as assessed valuation, shall be used as bases of spreading costs among beneficiaries, either separately or in combination. In such instances the proper basis of assessment spread should be determined primarily from engineering considerations.

On motion of Supervisor Kidwell, seconded by Supervisor Carpenter, and on the following roll call vote, to-wit:

AYES: Supervisors Kidwell, Carpenter, Gates, Kimball, Chairman Heil
NOES: None
ABSENT: None

the foregoing resolution is hereby adopted.

Chairman of the Board of Supervisors

ATTEST:

Clerk of said Board of Supervisors

SLO CO FC & WCD
m

STATE OF CALIFORNIA, }
County of San Luis Obispo, } ss.

I, RUTH WARNKEN, County Clerk and ex-officio Clerk of the Board of Supervisors of the San Luis Obispo County Flood Control and Water Conservation District, do hereby certify the foregoing to be a full, true and correct copy of an order made by the Board of Supervisors, as the same appears spread upon their minute book.

WITNESS my hand and the seal of said Board of Supervisors, affixed this 23rd day of May, 1968.

RUTH WARNKEN
County Clerk and Ex-Officio Clerk of the Board of Supervisors

[SEAL]

By _____ Deputy Clerk.

Appendix E

ENGINEERING ANALYSIS TECHNICAL MEMORANDUM

APPENDIX E

ENGINEERING TECHNICAL MEMORANDUM

DRAFT TECHNICAL MEMORANDUM
San Luis Obispo County
Community Drainage and Flood Control Study
SAN MIGUEL COMMUNITY

EXECUTIVE SUMMARY

This report summarizes the existing drainage conditions, discusses the nature of drainage/flooding problems, and identifies three potential projects to mitigate the problems within the San Miguel Community. Generally, drainage/flooding problems in the San Miguel Community are the result of shallow gradients and inadequate or non-existent storm drain infrastructure. During large storm events, storm water backs up west of the railroad tracks along Mission Street, sometimes causing damage to structures and personal property. Ponded water can remain along side of the county roads and at street corners for days after a rainfall. The projects proposed in this report are intended to provide positive drainage and reduce the ponding of storm water as well as present a potential Master Drainage Plan for the community. These projects are: (Project 1) to construct a subterranean storm drain system that will convey storm water west to east, beneath the railroad tracks, to the Salinas River (i.e. Master Drainage Plan); (Project 2) Create a retention and infiltration facility west of the railroad tracks and (Project 3) to construct a comprehensive network of curbs and gutters in the residential areas. A combination of *Project 1* and *Project 3* are recommended to mitigate drainage/flooding problems in the San Miguel Community.

INTRODUCTION

The purpose of the drainage and flood control study is to examine the existing drainage conditions of the San Miguel Community, identify problematic areas and issues, and develop conceptual solutions to the identified drainage and flood control problems. The discussion is based on: coordination with San Luis Obispo County Planning and Public Works Departments; community outreach discussions with residents of the San Miguel Community; and a site reconnaissance study conducted by Questa Engineering Corporation. **Figure 1** shows areas generally susceptible to ponding and shallow flooding within the community.

ENVIRONMENTAL SETTING

Climate and Topography

The community of San Miguel is situated in northern San Luis Obispo County, within the Coast Range Geomorphic Province of California. The Coast Range Geomorphic Province is characterized by a series of northwest-trending valleys and mountain ridges that run parallel to the coast. The community is nestled in the upper Salinas River Valley on the western bank of Salinas River.

The climate of San Miguel is Mediterranean and is characterized by warm summers and cool winters. Temperatures in the area range from 32 degrees Fahrenheit during winter months to 93 degrees Fahrenheit during summer. Average annual rainfall, occurring primarily between November and March, is approximately 15 inches.

Surface Geology and Soils

Geology and soil characteristics can have a significant influence on local drainage patterns. The surface geology in the San Miguel community is made up mostly of alluvium deposited by the Salinas River during Quaternary and Holocene time. In the vicinity of San Miguel, the alluvial deposits of the Salinas River have weathered into four primary soils series: Arbuckle; Hanford & Greenfield; Metz; and Xerofluvents. The relevant characteristics of these soils are listed in **Table 1**.

TABLE 1:
San Miguel Soils

Soil Series	Texture	Runoff Characteristics	Permeability
Arbuckle	fine sandy loam	slow to medium	moderately slow
Hanford & Greenfield	fine sandy loam	slow	moderately rapid
Metz	loamy sand	slow	moderately rapid
Xerofluvents	variable	medium	variable

Source: USDA, SCS, 1983. Soil Survey of San Luis Obispo County, California, Paso Robles Area.

Surface Hydrology

San Miguel is located in the Mahoney Canyon subbasin of the greater Salinas River watershed. The Salinas River drains 4,000 square miles, creating the largest inter-mountain valley of the Coast Range. The river is formed just north of Santa Margarita Lake and discharges into the Pacific Ocean approximately five miles south of Moss Landing. The Salinas River the longest underground river in North America, with nearly 80 miles of its 150-mile length occurring below the surface.

The Mahoney Canyon subbasin drains approximately 10 square miles. The subbasin is comprised of a three-mile segment of the Salinas River and at least four of its tributaries. The subbasin is flanked to the east and west by mountain ridges. The Salinas River flows along the eastern boundary of the San Miguel community, carrying runoff from the community north through Monterey County and discharging it into the Pacific Ocean.

FEMA Flood Zones

The Federal Emergency Management Agency (FEMA) has classified some portions of the San Miguel Community as being located within 100-year flood hazard zones of the Salinas River. These areas are generally located near the top of bank on the western and eastern sides of the Salinas River (**Figure 1A**)

Local Drainage Patterns

Drainage in the San Miguel Community has been divided into eight individual drainage zones (Zones A through H). Drainage zones are shown in **Figure 2**. In Zones A and C, concentrated runoff from steep east-facing foothills west of the community flows to drainage infrastructure along Highway 101. Culverts beneath Highway 101 convey flows from Zones

A and C to Zones B and D, respectively. Drainage problems have not been reported in Zones A and C.

Zones B, D and H generally slope gently (less than five percent slopes) to the east, towards the Salinas River. During large storm events, runoff from Zones B, D, and H pond west of the railroad tracks, causing drainage problems along Mission Street from 11th Street to 16th Street. Several factors contribute to the ponding of storm water west of the railroad tracks: (1) the lack of an organized curb and gutter system throughout the San Miguel Community; (2) the absence of a consistent positive slope from the vicinity of L Street east to the Salinas River; (3) the runoff characteristics of site soils; (4) the obstruction or destruction of the 12-inch culvert on the north side of 14th Street and Mission Street; and, (5) inconsistent road grades and general lack of curb and gutter to direct runoff. Ponded storm water west of the railroad tracks has nowhere to go other than to infiltrate into the ground. Under current conditions, the flooded land west of the railroad tracks is incapable of adequately absorbing urban runoff, resulting in the aforementioned drainage problems along Mission Street.

Runoff in Zones E, F, and G originates east of the railroad tracks and flows east towards the Salinas River. Runoff from Zones E and F is conveyed mainly within roadside ditches along 15th Street and River Road, respectively. The roadside drainage ditches carry flows east to the Salinas River. Serious drainage problems do not currently exist in Zones E and F though localized ponding was noted during field visits. However, future improvements to drainage infrastructure at the railroad tracks and/or additional impervious surfaces generated during future development would likely necessitate improvements to storm drain infrastructure in Zones E and F.

Zone G is currently undergoing residential development. The new subdivision has curbs, gutters, and drains to a central drainage pipe leading to the Salinas River. For this report this zone is generally accepted as a stand-alone zone and will not be discussed further.

Overview of Drainage and Flooding Issues

Three primary drainage issues have been identified in the San Miguel Community.

1. Ponding of storm water west of the Southern Pacific Railroad Tracks, and the subsequent flooding in the vicinity of Mission Street between 11th and 16th Streets. One of the main problems is the blocked culvert at 14th and Mission Street. This culvert does not drain to any downstream drainage facility. If, this culvert or a new one is to function properly then downstream facilities need to be constructed, to receive storm water from the Mission Street area.

2. Localized flooding and drainage problems also occur in some residential areas of Zones B and D. These problems are due to the lack of an organized curb and gutter system and the inconsistency in positive drainage towards the east.

3. While only minimal drainage problems currently occur in Zones E and F, it is anticipated that these areas will experience problems as the community builds out and as drainage improvements along the railroad tracks convey additional runoff to Zones E and F.

4. Drainage from Highway 101 causes shallow flooding at the corner of 10th and K streets. Flow collects in a flat area immediately downstream of the underpass and adjacent to the northbound on-ramp. Generally this flooding occurs because the street does not positively grade towards the east and the Salinas River. Roadway improvements to adjust the grade and installation of proper facilities should eliminate the flooding problem in this area. The highway 101 corridor account for only minor portions of the overall watershed draining into the San Miguel community. The impervious surface of Highway 101 is between 8 and 14 percent of designated sub watersheds A and C, respectively.

5. There are reports of residential flooding at the corner of 13th and L streets. The property is on the downhill side of the street and most likely overflows from street runoff enter the private property. The proper installation of curbs and gutters as well as amore coherent drainage system discussed in this memorandum should relieve this drainage issue.

EXISTING REGULATIONS AND DESIGN PLANS

San Luis Obispo County Curb and Gutter Ordinance. Unless waived, San Luis Obispo County requires the installation of concrete curbs, gutters, and sidewalks along the entire street frontage of any project in the following areas: (1) all new residential subdivisions within the urban reserve line, pursuant to Title 21 of the SLO County Code; (2) all new residential multifamily categories within an urban reserve line; (3) all commercial and office and professional categories within an urban reserve line; and (4) all industrial categories within an urban reserve line. While the San Miguel Community has shown interest in enforcing this ordinance, it is important that this ordinance be followed through to completion or be dropped. In other words, curbs and gutters must either be installed throughout the community or not at all. Partial implementation of curbs and gutters can exacerbate or create localized drainage/flooding problems in adjacent areas lacking curbs and gutters. The implementation of this policy is problematic because it does not provide an organized way to install curbs and gutter. One alternative may be to examine properties on a case-by-case basis. If drainage infrastructure exists, then require the construction of curb/gutter. If it does not exist, then may be a fee can be paid so that when enough funding is available, then a whole region gets curb and gutter at the same time. This issue needs to be more fully explored in subsequent reports for this study. Implementation is not addressed in this document.

San Miguel Community Design Plan. The purpose of the San Miguel Community Design Plan is to provide a framework of specific standards, guidelines, and programs for new development. The Plan briefly describes the drainage problems of the community, leaving further analysis and discussion of drainage solutions to this drainage study. However, as streets and other areas are improved, these drainage should be evaluated and * ability to collect larger amounts of runoff should be evaluated. Many of these systems consist of short outfall runs and upgrading these outfalls may be cost-effective. Roadway improvements directing off site runoff would have to be completed for this to function. These options have not bee evaluated for this memorandum.

Recent or Ongoing Projects within the Community. There are two projects that are either planned or are ongoing in the community. The first project is the Mission Street Enhancement improvements. This project has involved initial designs to provide parking, streetscape, and drainage improvements along Mission Street between 11th and 16th streets. Generally, the initial concept plan includes a subterranean drainage system with consistent curbs, and gutters. The project does not specifically address downstream connectivity issues in the regards to the drainage. All of the proposed drainage solutions would be consistent and work with this proposed Enhancement plan.

There are several recently improved subdivisions on the eastern side of the community in Zones E and G. As of this report, one of the subdivisions is under construction and streets have been installed. These developments all have curb and gutter systems and have constructed their own separate outfalls to the Salinas River. Only small areas of existing adjacent residential areas drain to these new facilities. These facilitie are basically stand alone. However, as streets and other areas are improved these drainages should be evaluated and there ability to collect larger amounts of runoff should be evaluated. Many of these systems consist of short outfall runs and upgrading this outfalls may be cost effective. Roadway improvements directing runoff to these facilities would have to be completed for these to accept additional runoff. These options have not been evaluated for this memorandum

SOLUTIONS TO DRAINAGE AND FLOODING ISSUES

In general, the community needs to develop an overall plan to collect and convey runoff in an organized fashion to the Salinas River. Specifically, a system of curbs, gutters, drop-inlets, constructed ditches; interim/permanent/ retention/detention basins and subterranean storm drainage pipes are needed to properly handle runoff. Three conceptual projects have been developed to address drainage and flooding issues in the San Miguel Community. All of the solutions involve attempts to resolve the ponding of water and provide positive drainage to suitable facilities and outfalls. The proposed projects are discussed from the Salinas River upstream.

Project 1 – Subterranean Storm Drain System

Project 1 proposes to develop a standard subterranean storm system for the community. This system would collect runoff from the eastern portion of town and deliver it to the Salinas River. The system would generally be laid out as a series of three new drainage lines and an improved drainage ditch. These lines could be connected to local drainage ways and would be designed to accommodate future growth of the community. These drainage facilities would work in conjunction with the proposed Mission Street Enhancement improvements and curb and gutter projects described in Project 3. The drainage improvements can be divided into three separate drainage lines; 1) 11th Street; 2) River Road; and, 3) 16th Street. In general, subterranean pipeline are proposed in areas that collect a quantity of runoff that would require a sizeable open ditch. An open ditch of this magnitude might propose a roadway hazard. Ditches are proposed when flows are small enough to be carried in ditches 6-feet wide or less.

- 11th Street Line. This is a proposed 36” storm drainage line that drains Zone H and areas to the east of the railroad tracks. The line would be placed under 11th Street at depths varying from 4 to 6 feet.

- 12th Street Ditch. This ditch would collect and convey runoff from the eastern portion of the community between 11 street and River Road. This ditch would likely be approximately 6 wide and 2 to3 feet deep. The reason a ditch is proposed in this location is that the contributing watershed is small and current land use of the area is mixed. The ditch would be an economical way to collect and convey storm water runoff. The ditch could then be replaced by a pipe system as the surrounding watershed urbanizes. Parcel access would be attained by crossing the ditch using small/medium sized in line culverts.

- River Road Line. This line would one of the main storm drainage lines in the community. It would take drainage from Zones C and D and would work with the proposed Mission Street Improvement plan. This line would be a combination of 48 and 36-inch pipes. It should be noted that this pipe or another temporary drainage plan would need to be implemented prior to the implementation of the Mission Street Improvement Plan.

- The 16th street line. This line would drain Zones A and B as well as the north portion of Mission Street. The line is comprised of 48 and 30-inch lines. The 30-inch extension up Mission Street collects runoff from the north portion of the community.

There are two San Miguel Community Services District easements that cross under the railroad tracks at River Road and 16th Street. Thus the location of the proposed storm drain pipes utilized these existing easement locations. Drainage improvements associated with *Project 1* are presented in **Figures 3 and 4**. It is assumed that bore and jack construction would be required for all crossings under the Railroad Lines. After construction, these facilities would need to be maintained by a local agency such as a community services district. However, maintenance responsibilities are not discussed in the technical memorandum and will be discussed in later reports. Not all of these facilities are needed immediately but should be phased in as the community develops and the conveyance of storm water runoff becomes a prominent need.

The recommended priority for these components is a follows:

1. River Road line- This line is the main line to accept runoff from the proposed redevelopment of the Mission Street improvements and thus is logical choice to be upgraded first.
2. 16th Street line – This line provide drainage for the northern portion of the community and would intercept a portion of the runoff entering the Mission Street central district. It would eliminate flooding along N street north of River Road.
3. 11th Street line - This line drains the southern portion of the community and accepts a certain amount of runoff from Highway 101.
4. 12th Street line - This is last priority because the areas in it watershed are largely undeveloped at this time.

Project Cost Estimates

11th Street Street Line

Item Description	Est. Quantity	Unit	Unit Price	Total
Rail Crossing	75	L.S.	$ 500.00	$ 37,500
Main Drainage Lines	1,200	L.F.	$ 175.00	$ 210,000
Curbs and Gutters	2,400	L.F.	$ 15.00	$ 36,000
Inlets	10	L.F.	$ 5,000.00	$ 50,000
Roadway Reconstruction	Estimate			$ 100,000
Outfall	1	L.S.	$ 20,000.00	$ 20,000
			Subtotal	**$ 453,500**
			25% Contingency	$ 113,375
			Engineering Design (20%)	$ 90,700
			Adminstrative/environmental (40%)	$ 181,400
			Total	**$ 838,975**

River Road Line

Item Description	Est. Quantity	Unit	Unit Price	Total
Rail Crossing	75	L.S.	$ 500.00	$ 37,500
Curbs/gutters	2,500	L.F.	$ 15.00	$ 37,500
Main Drainage Lines	2,000	L.F.	$ 175.00	$ 350,000
Inlets	15	L.F.	$ 5,000.00	$ 75,000
Roadway Reconstruction	Estimate			$ 80,000
Outfall	1	L.S.	$ 20,000.00	$ 20,000
			Subtotal	**$ 600,000**
			25% Contingency	$ 150,000
			Engineering Design (20%)	$ 120,000
			Adminstrative/environmental (40%)	$ 240,000
			Total	**$ 1,110,000**

16th Street Line

Item Description	Est. Quantity	Unit	Unit Price	Total
Rail Crossing	75	L.S.	$ 500.00	$ 37,500
Curbs/gutters	2,500	L.F.	$ 15.00	$ 37,500
Main Drainage Lines	2,100	L.F.	$ 175.00	$ 367,500
Mission Street Ext.	450	L.F.	$ 150.00	$ 67,500
Inlets	16	L.F.	$ 5,000.00	$ 80,000
Roadway Reconstruction	Estimate			$ 80,000
Outfall	1	L.S.	$ 20,000.00	$ 20,000
			Subtotal	**$ 690,000**
			25% Contingency	$ 172,500
			Engineering Design (20%)	$ 138,000
			Adminstrative/environmental (40%)	$ 276,000
			Total	**$ 1,276,500**

12th Street Ditch Improvements

Item Description	Est. Quantity	Unit	Unit Price	Total
Improve drainage ditch	800	L.F.	$ 85.00	$ 68,000
Roadway Reconstruction	Estimate			$ 80,000
Outfall	1	L.S.	$ 20,000.00	$ 20,000
			Subtotal	**$ 168,000**
			25% Contingency	$ 42,000
			Engineering Design (20%)	$ 33,600
			Adminstrative/environmental (40%)	$ 67,200
			Total	**$ 310,800**

Total Master Storm Drainage Improvements $ 3,536,275

Project 1 - Pros and Cons

Project 1 can be thought of as a long-term Master Drainage Plan. These drainage improvements can be completed as the need arises or paid for as developers build developments in the community. The largest drawback to the project is the cost of these facilities. Permitting and constructing a crossing under the railroad will require additional time, but if planned properly, should not preclude the implementation of the project. The River Road trunk line will be needed to accept runoff from the planned Mission Street improvements and should be considered a top priority. Also the project will require the construction of several new outfalls at the Salinas River. Permitting these outfalls can likely be completed utilizing the Nationwide Permit Program of the Section 404 of the Clean Water Act. However, the Salinas River is home to several federally listed endangered species, thus extensive consultation with the US Fish and Wildlife Service and the National Marine Fisheries Service should be anticipated. National Pollution Discharge Elimination System (NPDES) permits may require pretreatment of storm water prior to discharge to the Salinas River. This may require the design and construction of additional facilities to meet State Water Resource Control Board NPDES Phase II mandates.

Project 2 –Infiltration Basins West of Railroad Tracks

Project 2 involves the construction of one or two separate retention and infiltration basins on land west of the railroad tracks, between 11th Street and 16th Street, east of Mission Street and west of the railroad tracks. These detention basins are labeled as Basin 1 and Basin 2 in **Figure 5.** Development of this project would require the purchase of vacant land owned by the Southern Pacific Railroad and private landowners. The idea would be to collect all of the runoff to the west of the railroad tracks and deliver it to one or both basins. The size of these basins would depend on soil permeability properties and the design level. For this analysis we have assumed that a single basin would hold approximately 5 acre-feet and cover about one acre of land.

Project 2 – Cost Estimate

Infiltration Basin Costs

Item Description	Est. Quantity	Unit	Unit Price	Total
Excavation	9,680	yds	$ 8.50	$ 82,280
Emergency Outfall	1	L.S.	$ 7,500.00	$ 7,500
Inlets	2	L.F.	$ 1,500.00	$ 3,000
Land Cost	1	L.S.	$ 200,000.00	$ 200,000
Collection System	Estimate			$ 50,000
Landscaping	3	acres	$ 40,000.00	$ 120,000
			Subtotal	**$ 462,780**
			25% Contingency	$ 115,695
			Engineering Design (20%)	$ 92,556
			Adminstrative/environmental (40%)	$ 185,112
			Total	**$ 856,143**

**Note: This only includes irrigation and planting. Play equipment, furniture and other amenities are not included.*

Project 2 – Pros and Cons

Project 2 is a short-term solution to a long-term problem. Although development of the project would alleviate flooding problems in the downtown area, it would do nothing to solve existing drainage problems east of the railroad tracks that are likely to result from future development. The basins would require regular maintenance to ensure functionality and capacity. Additionally, the construction of one or two basins would occupy land that is located in the center of town and would be prime candidate for commercial development. Thus, in the end, an infiltration basin at either of these locations may be a temporary measure until facilities proposed in Project 1 can be built. The construction of an infiltration basin at this location could have detrimental impacts on future of the downtown area. The basin could be developed as a park but it would be difficult to disguise it fully.

Project 3 – Curbs and Gutters

There are no existing curbs and gutters in Zones B and D and there are minimal lengths of curbs and gutters in Zones E,F, and H. During large storm events, the lack of curbs and gutters results in localized drainage problems in some residential areas of the community. Title 21 of the SLO County Code requires curbs and gutters along the entire frontage of most development projects throughout the County. However, an inconsistent layout of curbs and gutters exacerbates localized flooding problems by directing additional runoff to properties without curbs and gutters. For this reason, the construction of curbs and gutters should be done simultaneously in order to be effective. Curbs and gutters have already been proposed along Mission Street as part of the Mission Street Enhancement Plan. Drainage infrastructure proposed under *Project 3* is presented below.

Project 3 – Cost Estimate

Estimated Cost by Zone

Drainage Zone	Estimated Quantity	Unit	Unit Price		Total
Zone B	2,400	Linear feet	$15.00	$	36,000.00
Zone D	13,350	Linear feet	$15.00	$	200,250.00
Zone E	4,715	Linear feet	$15.00	$	70,725.00
Zone F	9,775	Linear feet	$15.00	$	146,625.00
Zone H	10,875	Linear feet	$15.00	$	163,125.00
	41,115		**Subtotal**	**$**	**616,725.00**
			Contingency (10%)	**$**	**61,672.50**
			Design (20%)	$	123,345.00
			Administration (40%)	$	246,690.00
			Total	**$**	**1,048,432.50**

* note some roadway improvements may be necessary to ensure proper gutter flow lines and costs do not include sidewalk construction.

Project 3 – Pros and Cons

The development of Project 3 would provide an organized means of collecting and conveying runoff throughout the community. It is a necessary feature if shallow ponding and other small drainage problems are to be avoided. It will also make the collection and conveyance of storm water within a subterranean system more efficient. It should be noted that in some

instances roadway grades might need to be adjusted to allow for positive gutter flow to collection facilities.

CONCLUSION

The San Miguel Community is in need of immediate drainage improvements to mitigate both existing and anticipated future drainage structure and flooding problems. The recommended plan of action is a combination of *Projects 1* and *3*. The implementation of both projects would address drainage issues throughout the San Miguel Community. Complete implementation of these projects would cost approximately $4.3 million dollars and may be implemented over time as the community develops.

Upgrading the drainage infrastructure of the community should be phased. River road drainage should be the first candidate for upgrading. It is a main artery in the community and it will mesh well with the planned Mission Street improvements. It will allow for the installation of curbs and gutters in already established subdivision tracks. It will help eliminate the flooding occurring in the downtown areas as well along N street. Following the drainage installation curbs, gutters and sidewalks can be installed to give the community more a planned suburban feel.

In general the Projects 1 and 3 should be implemented concurrently for each drainage line. First, the drainage line is constructed then the installation of the curb and gutters and any roadway improvements can be completed. In this way a logical progression to installation of the drainage system can be accomplished that eliminates flooding, complies with County ordinances and provides a positive upgrading of the community infrastructure.

San Miguel Drainage Calcs

TO 16TH ST DRAINAGE PIPE:

Zone A

Freq.	Duration	C	I		Ca	A	Q
yr	min		mm/hr	in/hr		ac	cfs
10	15	0.45	36	1.42	1	16.7	10.65
50	15	0.45	48	1.89	1.2	16.7	17.04
100	15	0.45	53	2.09	1.25	16.7	19.60

Zone B

Freq.	Duration	C	I		Ca	A	Q
yr	min		mm/hr	in/hr		ac	cfs
10	30	0.57	25	0.98	1	38.7	22
50	30	0.57	33	1.30	1.2	38.7	34
100	30	0.57	36	1.42	1.25	38.7	39

Zone E Zone ABE

Freq.	Duration	C	I		Ca	A	Q	Q
yr	min		mm/hr	in/hr		ac	cfs	cfs
10	30	0.63	25	0.98	1	20.3	13	45
50	30	0.63	33	1.30	1.2	20.3	20	71
100	30	0.63	36	1.42	1.25	20.3	23	81

Total Area = 75.7

TO RIVER RD DRAINAGE PIPE:

Zone B

Freq.	Duration	C	I		Ca	A	Q
yr	min		mm/hr	in/hr		ac	cfs
10	15	0.45	36	1.42	1	19.8	12.63
50	15	0.45	48	1.89	1.2	19.8	20.21
100	15	0.45	53	2.09	1.25	19.8	23.24

Zone C

Freq.	Duration	C	I		Ca	A	Q
yr	min		mm/hr	in/hr		ac	cfs
10	30	0.6	25	0.98	1	35.7	21
50	30	0.6	33	1.30	1.2	35.7	33
100	30	0.6	36	1.42	1.25	35.7	38

Zone F Zone BCF

Freq.	Duration	C	I		Ca	A	Q	Q
yr	min		mm/hr	in/hr		ac	cfs	cfs
10	30	0.60	25	0.98	1	31.5	19	52
50	30	0.60	33	1.30	1.2	31.5	29	83
100	30	0.60	36	1.42	1.25	31.5	33	95

Total Area =	**87.0**

TO 11ST DRAINAGE PIPE:

Freq.	Duration	C	I		Ca	A	Q
yr	min		mm/hr	in/hr		ac	cfs
10	30	0.6	25	0.98	1	30.3	18
50	30	0.6	33	1.30	1.2	30.3	28
100	30	0.6	36	1.42	1.25	30.3	32

San Miguel Proposed Drainage Pipes

16TH ST DRAINAGE PIPE:

Pipe Diameter	Slope	n	Area	R	Velocity	Capacity	Design Q	Tottal Drainage Area
in	%		sq ft	ft	ft/s	cfs	cfs	ac
48	0.28	0.013	12.57	1	6.06	76	45	75.7

RIVER RD DRAINAGE PIPE:

Pipe Diameter	Slope	n	Area	R	Velocity	Capacity	Design Q	Tottal Drainage Area
in	%		sq ft	ft	ft/s	cfs	cfs	ac
48	0.36	0.013	12.57	1	6.88	86	52	87.0

11th Street Line

Pipe Diameter	Slope	n	Area	R	Velocity	Capacity	Design Q	Tottal Drainage Area
in	%		sq ft	ft	ft/s	cfs	cfs	ac
36	0.38	0.013	7.07	0.75	5.83	41	18	30.3

Date:
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Z:\2001\210176\San Miguel

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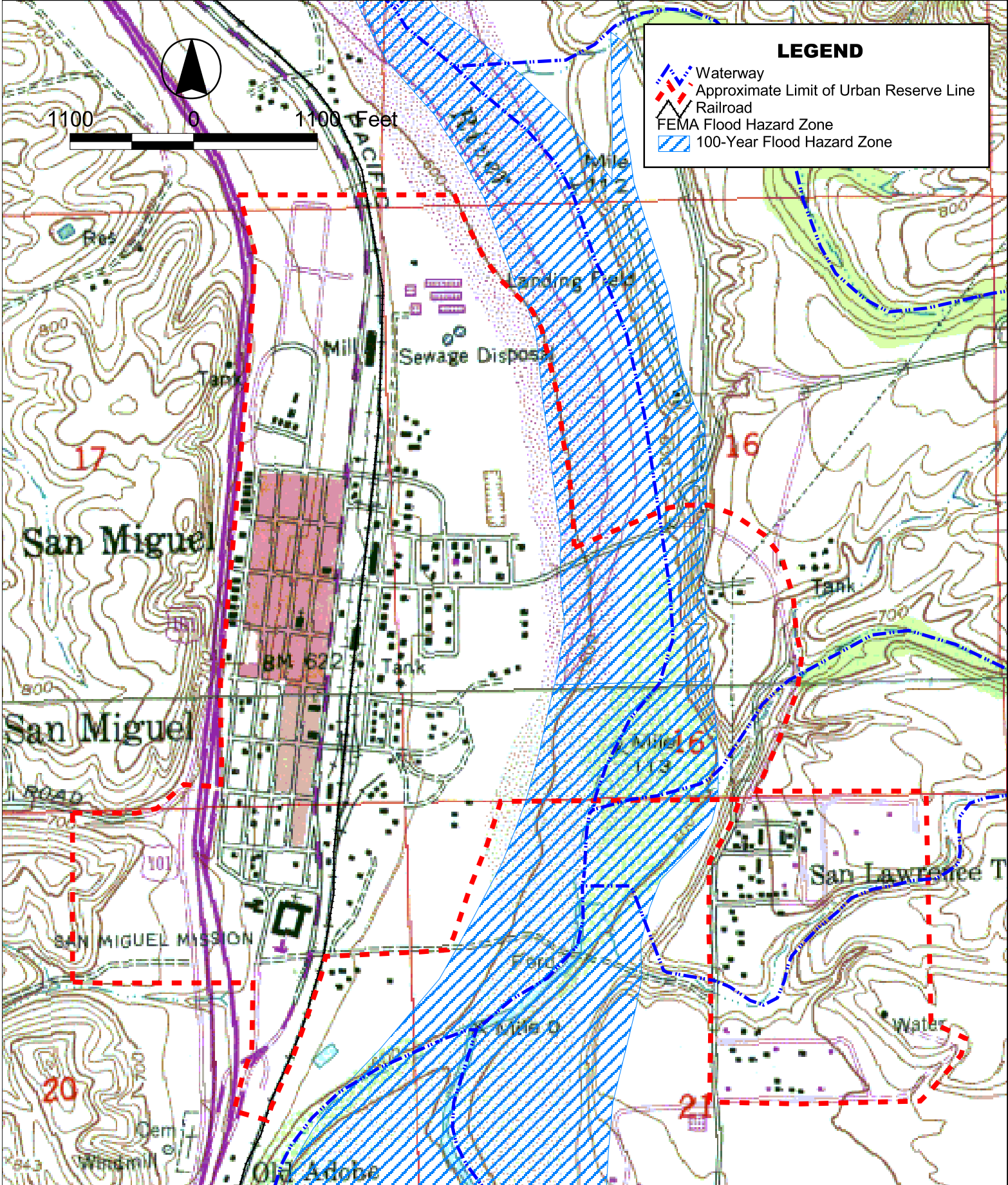
P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807

AREAS OF GENERAL FLOODING

SAN MIGUEL, CALIFORNIA

FIGURE
1



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FEMA FLOOD HAZARD ZONE

SAN MIGUEL, CALIFORNIA

FIGURE
1A

LEGEND

DRAINAGE PATH

0' 400' 800'

200'

SCALE: 1" = 400'

Date:	03 / 19 / 03
Drawn:	C.H.H.
Appr'd:	S.T.
Dwg. No:	21176-SMiguelTopo.DWG

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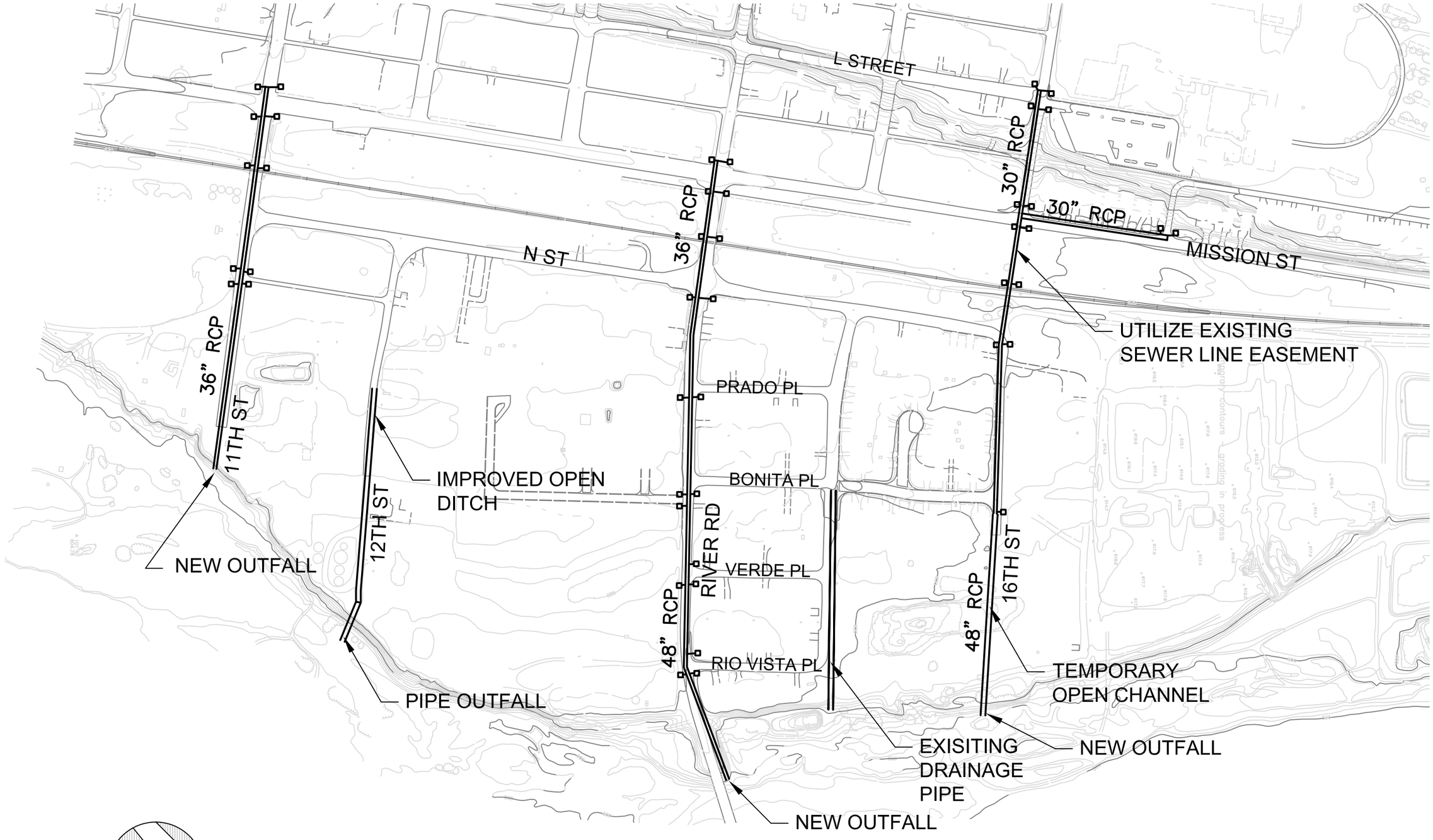
Civil Environmental & Water Resources
(510) 236-6114
FAX (510) 236-2423
questa@questaec.com
P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807

DRAINAGE ZONES AND FLOW DIRECTIONS

SAN MIGUEL, CALIFORNIA

FIGURE 2



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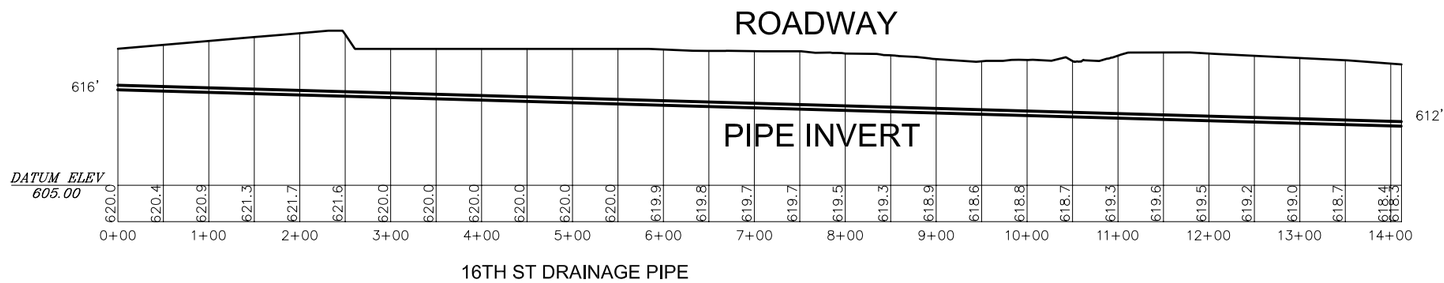
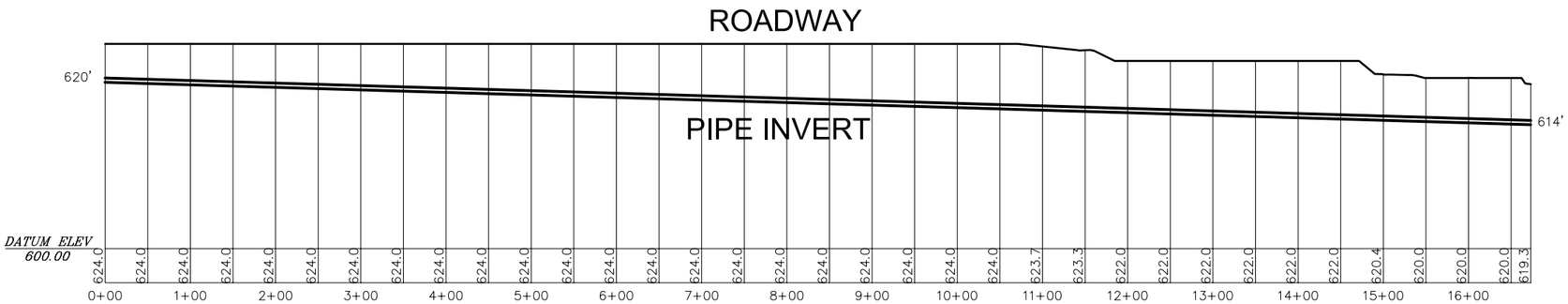
SUBTERRANEAN STORM DRAIN SYSTEM

SAN MIGUEL, CALIFORNIA

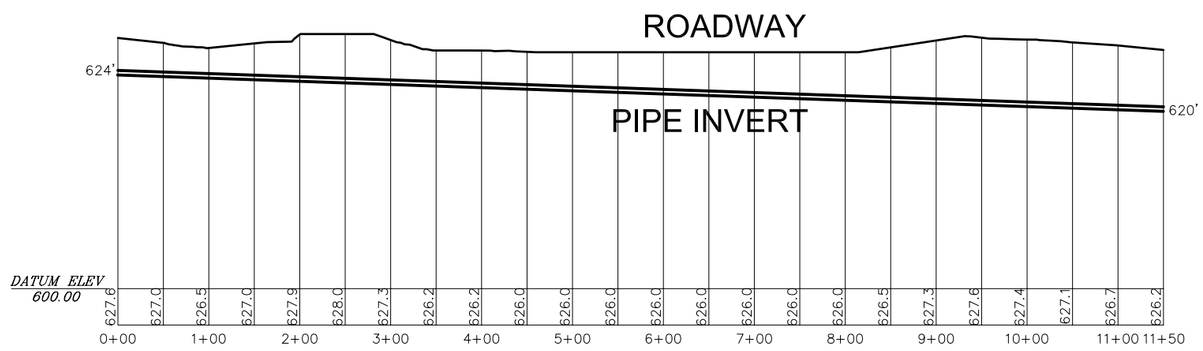
FIGURE 3



16TH ST DRAINAGE PIPE



RIVER ROAD DRAINAGE PIPE



11ST STREET PIPE

Date:	01 / 17 / 03
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Civil Environmental & Water Resources
(510) 236-6114
FAX (510) 236-2423
questa@questaec.com
P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807

PROFILES OF PROPOSED DRAINAGE PIPES

SAN MIGUEL, CALIFORNIA

FIGURE
4

0' 200'
100' 400'
SCALE: 1" = 200'

Date:	03 / 19 / 03
Drawn:	C.H.H.
Appr'd:	S.T.
Dwg. No:	21176-SMiguelTopo.DWG

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Civil Environmental & Water Resources
(510) 236-6114
FAX (510) 236-2423
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DETENTION AND INFILTRATION BASINS

SAN MIGUEL, CALIFORNIA

FIGURE 5

Date: 3/19/03 Drawn: KOW Appr'd: ST Path: Z:\2001\210176\San Miguel	QUESTA ENGINEERING CORP. Civil Environmental & Water Resources P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807	**PROPOSED CURBS AND GUTTERS** SAN MIGUEL, CALIFORNIA	FIGURE 6

Appendix F

ENVIROMENTAL TECHNICAL MEMORANDUM

APPENDIX F

ENVIRONMENTAL TECHNICAL MEMORANDUM

San Miguel
Community Drainage and Flood Control Project
Environmental Constraints Analysis

August 2003

Prepared for:
Raines, Melton, & Carella, Inc.
2001 North Main Street
Suite #400
Walnut Creek, California 94596

Prepared by:
Essex Environmental
637 Main Street
Half Moon Bay, California 94019

Essex Environmental
975 Osos Street
San Luis Obispo, California 93401

INTRODUCTION

In April 2003, a hydrology and hydraulics study examined the existing drainage conditions of the San Miguel community, identified problematic areas and issues, and developed conceptual alternatives to the identified drainage and flood control issues. This environmental constraints analysis assesses the environmental impacts and fatal flaws associated with the proposed solutions to the drainage problems in the community of San Miguel. Each proposed solution was examined for the biological resources, cultural resources, and land use constraints likely to be present in each given area.

PROJECT DESCRIPTION

To address the different flooding issues in the community of San Miguel, several site-specific solutions have been proposed. The project alternatives have been organized by specific problem:

1) Ponding of storm water west of the Union Pacific Railroad Tracks and subsequent flooding in the Mission Street vicinity
2) Localized flooding and drainage problems in residential areas
3) Anticipated future drainage problems between the railroad tracks and the Salinas River floodplain as the community expands and additional runoff is generated

Alternative 1. Subterranean Storm Drain System

Alternative 1 proposes to develop a standard subterranean storm drain system for the community. This system would collect runoff from the western portion of town and deliver it to the Salinas River. The system would generally be laid out as a series of three new drainage lines and an improved drainage ditch, including:

- 11th Street line. This approximately 600-foot-long, new storm drainage line would be installed under 11th Street at depths varying from 4 to 6 feet. The line would drain areas south of 11th Street and east of the railroad tracks, and discharge runoff via a new outfall to the Salinas River floodplain.

- 12th Street ditch. This approximately 400-foot-long improved open ditch would collect and convey runoff from the eastern portion of the community between 11th street and River Road. Runoff would be discharged via a new outfall to the Salinas River floodplain.

- River Road line. This approximately 1,000-foot-long new line would be installed under River Road and would serve as one of the main storm drainage lines in the community. The line would convey drainage from 11th Street north to halfway between 15th Street and 16th Street, along with an area of similar width west of Highway 101, and discharge runoff to a new outfall to the Salinas River floodplain. This line would work with the proposed Mission Street Improvement Plan and would need to be constructed concurrently with the Mission Street Plan's implementation.

- 16th Street line. This approximately 1,000-foot-long, new line would be installed along the existing sewer line easement along 16th Street and would drain an area west of the northern portion of Mission Street to a new outfall to the Salinas River floodplain.

Alternative 2. Infiltration Basins West of Railroad Tracks

Alternative 2 proposes the construction of one or two separate retention and infiltration basins excavated on vacant, ruderal land west of the railroad tracks, between 11th Street and 16th Street and between Mission Street and the railroad tracks. All of the runoff west of the railroad tracks would be conveyed to one or both basins and allowed to infiltrate the native soils. Each basin would hold about 5 acre-feet of water and cover approximately 1 acre of land.

Alternative 3. Curb and Gutter System in San Miguel

In several areas of San Miguel, there are few or no existing curbs and gutters. During large storm events, the lack of curbs and gutters results in localized drainage problems in some residential areas of the community. Curbs and gutters would be constructed in strategic areas throughout the San Miguel Community and would convey flows to the subterranean storm drain system described in Alternative 1.

METHODS

Project alternatives were analyzed for environmental constraints that would prevent agency approval, increase costs (particularly for mitigation), or delay the project schedule. Existing documentation relative to each resource topic (e.g., biological resources, cultural resources, and land use) was examined to help determine the likelihood of constraints. Minor impacts discovered during the analysis are not included in this report because they can be avoided or minimized by using best management practices or by following engineering or design standards.

Biological Resources

Essex performed a site assessment with Raines, Melton, & Carella, Inc. (RMC) on June 30, 2003 to conduct a reconnaissance level review of biological resources in the project area. The assessment area included the proposed project sites and bordering areas. Each site was generally assessed for its potential to support sensitive biological and botanical resources. Information from the California Natural Diversity Database was used to determine the potential for sensitive species and habitats in the project areas.

Cultural Resources

The San Luis Obispo County Department of Planning and Building does not maintain a database of cultural resource records in San Miguel. While no standard record searches or site visits were conducted, two culture resource studies conducted in the area were reviewed, and the area should be assumed as a culturally sensitive area due to the vicinity of Mission San Miguel and the Salinas River.

Land Use

The *San Luis Obispo General Plan* and *San Miguel Design Plan* were reviewed to determine whether the project was consistent with local policies. A Geographic Information System was used to examine the presence of prime farmland and farmland of local or state importance in the project area.

RESULTS

Environmental Constraints

Table 1 summarizes the environmental constraints that may be encountered for each project alternative. Based on this preliminary analysis, major environmental constraints include potential impacts to endangered/threatened species habitat (Alternative 1) and the potential presence of cultural resources (Alternatives 1, 2, and 3).

Although studies were not conducted for the presence of hazardous materials, there is local concern that hazardous materials may be present near the site for Alternative 2. A Phase I and Phase II site assessment would be required as part of the California Environmental Quality Act review process, and any hazardous soil would need to be excavated and disposed of at an appropriate facility during construction. Higher project costs and schedule delays for Alternative may result from the required preconstruction studies and handling and disposal during construction.

Permit Assessment

An assessment of the state and federal environmental permits that may be required for each project alternative is provided in Table 2. An estimate of the timeframe typically required to obtain each type of permit is summarized in Table 3. Based on the level of research performed for this analysis, all of the project alternatives would be possible to permit if mitigation measures are implemented to avoid significant environmental impacts.

Potential Mitigation

Potential impacts to environmental resources may result from the proposed project alternatives. Those impacts may require implementation of mitigation measures to protect sensitive, threatened or endangered species, water quality, and cultural resources. Mitigation measures could include:

- Conducting preconstruction surveys for sensitive species
    - Monitoring during construction in locations with sensitive species habitat
- Implementing erosion and sediment control measures during construction

- Monitoring by a qualified archeologist during ground disturbance, and identifying exclusion zones for cultural resources may be necessary depending on the results of a record search. Recovery and treatment could be required depending on findings.

Additional Studies/Surveys

The following studies/surveys will need to be performed in order to begin the permitting phase of the project:

- Habitat assessment for Alternative 1
- Sensitive species surveys for Alternative 1
- Cultural resource record searches for Alternatives 1, 2, and 3

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U.S. Geological Survey. 1994. *San Miguel Quadrangle, California*. 7.5-minute series Digital Raster Graphics.

Table 1: San Miguel Environmental Constraints

Alternatives	Biological	Cultural Resources[1]	Land Use
Alternative 1. Subterranean Storm Drain System			
Develop a subterranean storm drain system with a series of three new drainage lines and an improved drainage ditch that would convey runoff to the Salinas River floodplain via four new outfalls.	Construction of outfalls to the Salinas River floodplain may affect endangered/threatened species habitat, including steelhead, arroyo toad, California red-legged frog (CRLF), and San Joaquin kit fox (SJKF). Other sensitive species that may also be affected include: shining navarretia (a rare plant), western spadefoot, southwestern pond turtle, California horned lizard, two-striped garter snake, nesting birds in riparian zone, and San Joaquin pocket mouse. Higher project costs and schedule delays may result from required surveys, monitoring, and mitigation for sensitive species.	Recorded sites in San Miguel include Mission San Miguel and the Rio-Caledonia Adobe. Areas in San Miguel could be potentially sensitive due to the vicinity of Mission San Miguel and the Salinas River floodplain. Higher project costs and schedule delays may result from monitoring during construction and treatment of finds.	None
Alternative 2. Infiltration Basins West of Railroad Tracks			
Construct one or two separate retention and infiltration basins between 11th Street and 16th Street and between Mission Street and the railroad tracks.	None	Recorded sites in San Miguel include Mission San Miguel and the Rio-Caledonia Adobe. Areas in San Miguel could be potentially sensitive due to the vicinity of Mission San Miguel and the Salinas River floodplain. Higher project costs and schedule delays may result from monitoring during construction and treatment of finds.	None
Alternative 3. Curb and Gutter System in San Miguel			
Construct curbs and gutters in strategic areas throughout San Miguel to convey flows to subterranean storm drain system.	None	Recorded sites in San Miguel include Mission San Miguel and the Rio-Caledonia Adobe. Areas in San Miguel could be potentially sensitive due to the vicinity of Mission San Miguel and the Salinas River floodplain. Higher project costs and schedule delays may result from monitoring during construction and treatment of finds.	None

[1] The San Luis Obispo County Department of Planning and Building does not maintain a records database for San Miguel. No standard record searches or site visits were conducted.

Table 2: San Miguel Permit Assessment

Alternative	Project Description	CEQA[1] Document	SHPO 106[2]	CDFG 1601[3]	Corps 404 Permit[4]	USFWS Section 7[5]	NMFS Section 7[6]	RWQCB 401[7]	SWRCB General Permit[8]	SWRCB Phase II SWMP[9]	Notes
Alternative 1. Subterranean Storm Drain System											
Develop a standard subterranean storm system	Construct three new drainage lines along 11th Street (approximately 600 feet), River Road (approximately 1,000 feet) and 16th Street (approximately 1,000 feet); improve an approximately 400-foot section of an open drainage ditch along 12th Street; construct four outfalls to the Salinas River floodplain.	ND[10] (see notes)	Possibly (see notes)	Yes	Possibly (see notes)	Possibly (see notes)	Possibly (see notes)	Possibly (see notes)	Yes	No	Because there is potential to impact threatened/endangered species, a ND/MND will be required. A Corps permit will be required if the new outfall is constructed below ordinary high water (OHW). The Corps will consult with the NMFS and USFWS if threatened/endangered species could be affected by outfall construction and/or operation. If a Corps permit is required, a 401 Certification from the RWQCB will also be necessary. Depending on the results of a cultural records search, and if the Corps is involved, Section 106 consultation may be required.
Alternative 2. Infiltration Basins West of Railroad Tracks											
Construct infiltration basins	Build one or two retention and infiltration basins between 11th Street and 16th Street and between Mission Street and the railroad tracks; basins would be excavated to a depth of approximately 10 to 15 feet and fenced off without berms; all runoff west of the railroad tracks would be conveyed to one or both basins.	ND (see notes)	No	No	No	No	No	No	Yes	No	Because the project involves the construction of new facilities and there is potential to affect cultural resources while excavating the infiltration basins, a ND/MND will be required. However, since there are no federal permits required for the project, Section 106 Consultation is not triggered.

[1] California Environmental Quality Act: Required if a state agency has to take action on project; if the project does not qualify for an exemption, the compliance document is either a Negative Declaration or Mitigated Negative Declaration (ND) or an Environmental Impact Report (EIR)

[2] State Historic Preservation Office – Section 106 (No cultural resource information was available for San Miguel from the San Luis Obispo County Department of Planning and Building): Required if a project has the potential to impact cultural resources

[3] California Department of Fish and Game – 1601 Streambed Alteration Agreement: Required if a project has the potential to impact sensitive species or their habitat

[4] U.S. Army Corps of Engineers – 404 Permit: Required if a project involves work below the ordinary high water mark

[5] U.S. Fish and Wildlife Service – Section 7 Consultation: Required if a project has the potential to impact sensitive species or their habitat

[6] National Marine Fisheries Service – Section 7 Consultation: Required if a project has the potential to impact sensitive marine and anadromous fish species or their habitat

[7] Regional Water Quality Control Board – 401 Certification: Required if a project has the potential to discharge to surface water, ground water, or other water systems

[8] State Water Resources Control Board – National Pollutant Discharge Elimination System (NPDES) General Construction Permit: Required if a project results in ground disturbance of more than 1 acre

[9] State Water Resources Control Board – Phase II Storm Water Management Plan Revision: Required for potential discharges to surface water, ground water, or other water systems by small municipal separate storm sewer systems not covered by the Phase I program; small municipal separate storm sewer systems that are not in urban clusters, do not discharge to a sensitive stream or waterbody, or do not have a high population density or high growth rate are not covered by the Phase II program; since San Miguel does not meet these criterion, they do not need to comply with the Phase II program.

[10] Negative Declaration or Mitigated Negative Declaration: Required for projects with impacts that are less than significant or less than significant with mitigation

Alternative	Project Description	CEQA[1] Document	SHPO 106[2]	CDFG 1601[3]	Corps 404 Permit[4]	USFWS Section 7[5]	NMFS Section 7[6]	RWQCB 401[7]	SWRCB General Permit[8]	SWRCB Phase II SWMP[9]	Notes
Alternative 3. Curb and Gutter System in San Miguel											
Construct curbs and gutters	Construct curbs and gutters in strategic areas throughout San Miguel to convey flows to subterranean storm drain system.	ND (see notes)	No	No	No	No	No	No	Yes	No	Because there is potential to affect cultural resources, a ND/MND will be required. However, since there are no federal permits required for the project, Section 106 Consultation is not triggered.

Table 3: San Miguel Permitting Timeframes

Permit	Typical Timeframe* (months)	Notes
California Environmental Quality Act (CEQA)		
Exemption	< 1	
Negative Declaration (ND)/Mitigated Negative Declaration (MND)	6 - 12	
California Department of Fish and Game (CDFG) 1601 Streambed Alteration Agreement	3 - 6	CEQA must be completed before the 1601 Agreement can be issued.
U.S. Army Corps of Engineers (Corps) Section 404		
Nationwide Permit	1 - 3	Section 7 and Section 106 consultations are required to be complete.
Individual Permit	12 - 18	National Environmental Policy Act (NEPA) compliance is required, which can take one year or more.
U. S. Fish and Wildlife Service (USFWS)/ National Marine Fisheries Service (NMFS) Section 7 Consultation		
Informal	1 - 3	
Formal	6 - 12	
State Historic Preservation Office (SHPO) Section 106 Consultation	6 - 12	
Regional Water Quality Control Board (RWQCB) 401 Certification	1 - 3	CEQA must be completed before the 401 Certification can be issued.

Permit	Typical Timeframe* (months)	Notes
State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Construction Permit	< 1	A Storm Water Pollution Prevention Plan (SWPPP) must be prepared prior to construction and implemented during construction.

* Timeframes do not include time required to perform pre-applications studies, to prepare required applications, and to complete prerequisite approvals.

Appendix G

FUNDING ASSISTANCE REVIEW TECHNICAL MEMORANDUM

APPENDIX G

FUNDING TECHNICAL MEMORANDUM

Technical Memorandum

Raines, Melton & Carella, Inc.
Consulting Engineers/Project Managers

San Luis Obispo County
Community Drainage and Flood Control Studies

Task: **Task 8 – Funding Assistance Review**

To: Mr. Dean Benedix, Project Manager, San Luis Obispo County

Prepared by: Jeffrey Tarantino, P.E.

Reviewed by: Lou Carella, P.E., Mary Grace Pawson, P.E.

Date: July 30, 2003

File: 34-9.B.8

1 Introduction

The San Luis Obispo County Flood Control and Water Conservation District ("District") has contracted with Raines, Melton, & Carella, Inc. ("RMC") to prepare six community drainage and flood control studies (the "Study"). The communities involved in the Study are Cambria, Cayucos, Nipomo, Oceano, San Miguel, and Santa Margarita. The problems in these communities include inadequate local drainage systems, unmaintained creeks, and inadequate conveyance capacity in creeks. Technical Memoranda detailing the problems for each of the communities and possible solutions are being completed as a separate task of this scope of work. This memorandum outlines funding source options and requirements for possible solutions to the six community drainage and flood problems.

The District is the designated County agency responsible for managing, planning, and maintaining drainage and flood control facilities in unincorporated public areas where no other agency has assumed an active role in such activities. The District is not responsible for funding the design and construction of private property benefiting from drainage and flood control improvements. Exceptions to this exist in established Community Services Districts (CSD's) where the CSD's may be specifically designated as authorized agencies responsible for or authorized to perform these as well as other services. Design and construction of drainage and flood control improvements is the responsibility of the local lead agency or sponsoring entity which implements the improvements on behalf of the property owners who benefit from the improvements. This policy is consistent with State subdivision development law, which requires the benefiting properties to finance property improvements.

Funding of management, planning, design, construction and maintaining drainage and flood control facilities in unincorporated areas comes from four primary sources:

- Local Community Funding: The property owners benefiting from the improvements are responsible for funding or obtaining funding for the implementation of the improvements. They are also responsible for funding annual maintenance of the system if the facilities primarily serve private property. The District Board's policy does not provide for the use of general flood control revenue, collected from all County properties, to be used to construct improvements that mainly benefit individual property owners.

- Supplemental Grant Program: Numerous Federal, State & Private grant programs exist which provide partial funding for drainage improvements, flood control and related watershed, stream and shore protection. It is the goal of these grant programs to provide supplemental funding for a community or agency for flood protection, flood mitigation and resource conservation and enhancement programs. Grant funding, if available, or establishment of loans through bonds sold through the formation of assessment districts, are examples of potential supplemental funding for implementation of drainage and flood control improvements. These programs are uniquely focused, have stringent qualifying regulations, specific procedural processing and monitoring requirements. These programs usually require a significant community funding or matching contribution.
- General Flood Control Fund Revenue: It is the District Board's adopted policy that general flood control revenue funding be used only for management, planning and non-roadway related maintenance services for drainage and flood control facilities. General flood control revenue is generated from County property taxes collected from all property in the County. This policy does not provide for the use of these funds for construction of new drainage or flood control improvements since this revenue is limited and is to be spent to benefit County areas at large.
- Road Fund Revenue: The use of Road fund revenue is restricted to roadway servicing maintenance and improvements, including drainage and flood control maintenance and roadway related improvements necessary to maintain the integrity and safety of the County road system. County Road funds are severely limited and inadequate relative to the needs of the expansive County maintained road system.

The realities of the overwhelming need for multi-million dollar funding for drainage and flood control facilities throughout the County and limited revenue sources pose a challenge to Communities to locally determine the desire and importance of the implementation of drainage infrastructure. For this reason, it is the policy of the District to encourage a local entity to serve as the lead agency (e.g. a CSD) to provide an implementation strategy and financing mechanism that is supported by the Community or area of benefit. If there is no local agency available or agreeable to assist in project implementation, the District is available to provide planning and management services for supporting community groups. However, if a community is unwilling to pay for the benefiting infrastructure, the project will not advance until funding is secured.

1.1 Technical Memorandum Objectives

The purpose of this technical memorandum (the "TM") is to provide a summary of various funding options for the projects developed as part of the Study. The selection of funding alternatives presented in this TM is based on the general types of drainage and flood mitigation projects proposed for the six communities, and is not project specific. The basic problems experienced and potential solutions for the six communities are summarized in Table 1 and fall into two categories; 1) local drainage, and 2) creek conveyance capacity.

Table 1 - Summary of Problems and Solutions

Problem	Alternative Solution
Inadequate Local Drainage	• Curb and Gutter • Percolation Basins • Storm Drain System
Overtopping of Creek Banks	• Larger Culverts • Improve Channels • Levees • Floodwalls • Vegetation Management • Increase Maintenance • Retention Basins

1.2 Recommended Funding Strategy

A community or area consensus must be established as an advocate for the installation of new drainage and flood control facilities. A local lead agency (e.g. CSD) or other sponsoring agency should be utilized to promote and sponsor the project on behalf of the supporting community. The County Flood Control District staff is available to assist if the local community supports the implementation but no local agency or sponsor is available or supportive of a project. Included in the community consensus must be the commitment to fund a significant portion of the initial costs of implementing and constructing the project. It should be recognized that the strongest applicants for leveraged grant or other supplemental funding have an established and effective local funding program. It is recognized that nearly all of the recommended project may need to seek and obtain leveraged supplemental funding from outside the local community. Additionally, the community or area must be committed to fund annual maintenance of the facilities to the extent they provide a benefit to private property. A commitment to maintenance is one way a local community can demonstrate a supportive and effective program to a potential grant program source.

After establishment of a supportive community and lead agency, the lead agency should apply for supplemental grant, loan and/or cost sharing funds through available programs outlined herein. The implementation of a project will depend on the success and continued support of the community and the success of the grant application process.

This TM is organized to outline first, the local funding options that the lead agency can establish, and second the outside Federal and State funding options that may be accessed to "match" local funding sources and help implement projects. Because the local match is critical to accessing outside funding, it is highly recommended that the lead agency begin to establish local funding mechanisms (even if these do not fully fund the recommended projects) in order to be more competitive for outside funds. The recommended local funding mechanisms include 1) grants, 2) taxes, 3) assessments, and 4) fees (property based and development impact). The creation of a local funding source, plus the potential procurement of Federal and State grants, establishes the framework for a comprehensive community funding program. This approach

also acknowledges the realistic nature of public projects that no capital improvement can rely solely on grants.

2 Local Funding

It must be recognized by communities needing and desiring drainage and flood control improvements that the area property owners obtain a significant benefit from the installation of these improvements. This benefit is partially demonstrated in the increased overall property value where drainage improvements have been installed. Likewise, in areas of flooding or areas where drainage infrastructure does not exist, the lack of this benefit is observed in reduced property value. Therefore, significant or majority funding from the property owners benefiting from the improvements is the primary funding source of such projects.

As previously discussed, the lead agency or sponsoring entity is the responsible agency for programming new drainage and flood control improvements where there is community support and potential funding resources. Existing CSD's could be responsible for drainage and flood control project implementation. However, the original LAFCo designated services of the CSD must include these powers. If these powers are not currently included within the CSD's current charter service designations, they can only be included by holding an election. It is assumed that the lead agency is the applicant and/or responsible agency for administering the funding options discussed in this section.

The lead agency has several options for acquiring funds for the community or area involved in the study. The primary avenues for collection of property owner revenue are taxes, assessments, and fees. Each of these is detailed in the following subsections.

2.1 Special Taxes

Taxes are the most common means for a government to raise revenue. An existing tax can be raised, or a new tax can be levied on residents in an area to fund flood control projects. By definition, this is a special tax requiring approval from two thirds of the electorate (residents). If approved, the revenue generated would be allocated specifically for drainage and flood control projects anywhere in the proposed improvement boundary. It would be the responsibility of the lead agency to determine where those funds would be spent.

This form of revenue requires all residents to pay the tax regardless of benefits received and the special tax formula does not need to be related to benefits received from the proposed projects. In order to establish the special tax, the lead agency would need to develop and adopt a formula; the Board of Supervisors approves placing the tax on the ballot. A special tax is approved by resident registered voters (except in the case of Mello-Roos CFD tax which can be approved by property owners in uninhabited areas). Figure 1 illustrates the special tax adoption process.

2.2 Benefit Assessments

A benefit assessment is a charge levied on a property to pay for public improvements or services that benefit the property. The difference between an assessment and a tax is that benefit assessment formula must quantify the relationship between the assessment charged and the benefit received by the property (if a property does not benefit, it cannot be assessed).

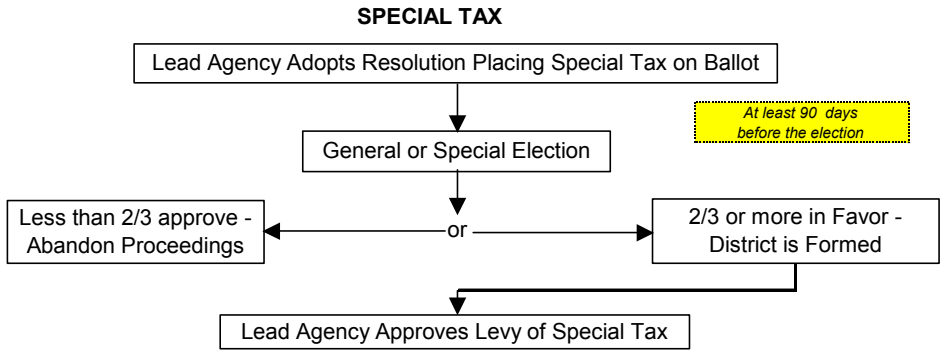

Figure 1 – Special Tax Adoption Process

All new assessments must conform to the requirements of Proposition 218, which was passed in November 1996. Proposition 218 specifically requires that property owners (not registered voters) be allowed to vote on new benefit assessments. New assessments may be approved by a simple majority approval of the property owners, with votes weighted in proportion to the assessment proposed.

In order to implement a new assessment, the lead agency must define those parcels that receive benefit and define the method of assessment in an Engineer's Report. Figure 2 illustrates the benefit assessment adoption process.

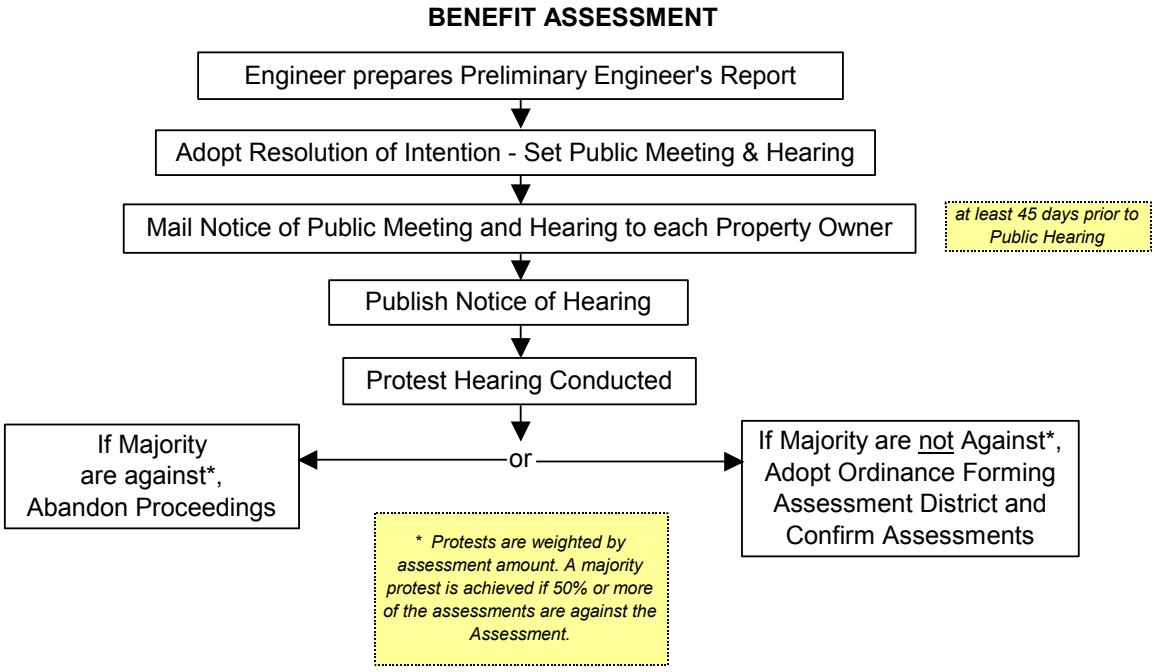

Figure 2 – Benefit Assessment Adoption Process

2.3 Property-Based Fee

A property-based user fee is a charge levied on a property to pay for public improvements or services that are used by that property. The difference between an assessment and a user fee is that assessments rely on a demonstration of special benefit (which can be hard to prove) while user's fees require demonstration of use. In the case of drainage facilities, a user fee allows a lead agency to collect revenue from properties that contribute runoff into the system but may not flood because of their location.

A user fee can be structured proportionally to the amount each parcel uses the flood control facilities rather than how much each property benefits from the services or improvements provided. This allows program costs to be spread over a larger customer base. For flood control work, user fees are typically related to impervious area on the property, which can be equated to runoff. Like the benefit assessment, a user fee may also be implemented by a 50% vote; however, before the vote may be initiated, a noticed protest hearing must take place and less than 50% written protest must be received.

In order to implement a new user fee, the lead agency must define those parcels that use the various drainage facilities and define its method of calculating a fee proportional to use. Figure 3 illustrates the user fee adoption process.

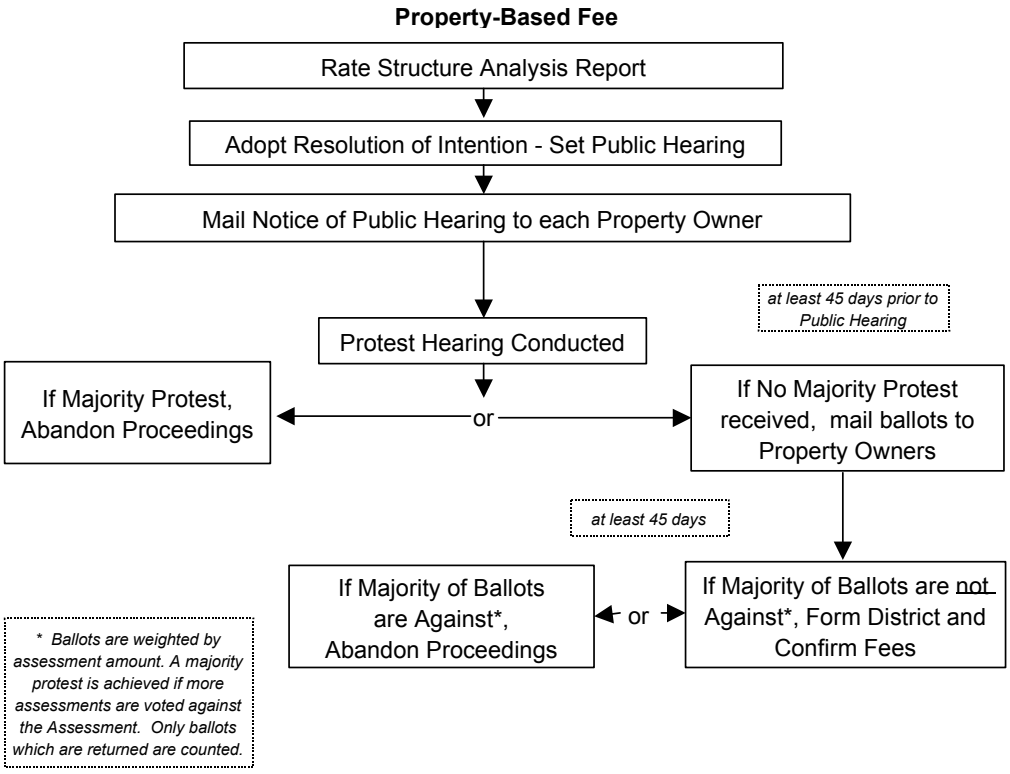

Figure 3 – Property Based Fee Adoption Process

2.4 Development Impact Fee

Government Code Section 66000 et.seq., allows the County or District to collect development fees to fund the installation of storm drain infrastructure necessary to offset the impacts of development. Development Impact Fees are tied to either General Plans or Capital Improvement Programs approved by the County or District. As regular updates of the General Plan and/or Capital Improvement Programs are prepared, additional storm drain infrastructure is identified to support the new developments and projects. The fees cannot be used to correct existing problems; although they can be used to fund a "fair share" of new projects.

Development Impact Fees are not subject to vote. They can be approved by a majority of the County Board of Supervisors or the Flood Control and Water Conservation District Board of Directors after a protest hearing. Figure 4 illustrates the adoption process.

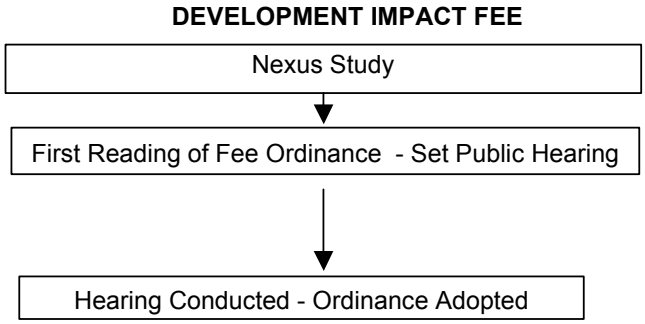

Figure 4 – Development Impact Fee Adoption Process

The County/District should implement Development Impact Fees in all the communities. The communities of Nipomo, San Miguel, and Santa Margarita would benefit from the collection of impact fees as their general plans indicate continued growth of residential and commercial properties. Cambria, Cayucos and Oceano appear built out, however, redevelopment and larger remodels (improvements that exceed a certain percentage of the current property home value) could provide the nexus for collecting impact fees.

3 Outside (Leveraged) Funding Sources from the Federal Analysis

The US Army Corps of Engineers (Corps) developed the Final Funding Program Analysis Report (FPAR) for the San Luis Obispo Creek Watershed (Report) in October 2001. The purpose of the FPAR was to inform the District of monies that might be available to fund a variety of watershed protection projects. The funding sources identified in the FPAR are included in the funding review as part of this TM. In order to not duplicate efforts, the funding sources identified in the FPAR are incorporated as part of this TM and select sections from the FPAR are included in Appendix B.

3.1 Applicable Funding Sources

Although all the funding sources identified in the FPAR relate to watershed protection, only a small number of those sources apply to the types of projects proposed by this Study. Table 2 identifies applicable funding sources described in the FPAR.

Table 2 – Applicable Funding Sources from Funding Program Analysis Report

Agency	Funding Source	Description
US Army Corps of Engineers	Flood Hazard Mitigation and Riverine Ecosystem Restoration Program	Watershed-based program focusing on providing flood protection through non-structural measures when possible
US Army Corps of Engineers	Emergency Streambank and Shoreline Erosion Protection	Allows emergency streambank and shoreline protection to prevent damage to public facilities
US Army Corps of Engineers	Section 205 Flood Control Project	Local protection from flooding by the construction of flood control works such as levees, channels, and dams.
US Army Corps of Engineers	Section 206 Aquatic Ecosystem Restoration	Carries out aquatic ecosystem restoration projects that will improve the quality of the environments.
US Army Corps of Engineers	Section 208 Snagging and Clearing	Local protection from flooding by channel clearing and excavation.
California Department of Water Resources	Urban Streams Restoration Program	Reduce damages from streambank and watershed instability and floods while restoring the environmental and aesthetic values of streams.
State Water Resources Control Board	Nonpoint Source Implementation Grant Program	Reduce erosion in channels to improve water quality through nonpoint source questions
State Water Resources Control Board	Proposition 13 Watershed Protection Program	Develop local watershed management plans and/or implement projects consistent with watershed plans

Notes:

Projects authorized under the US Army Corps of Engineers Continuing Authorities Program (CAP). The CAP provides the Corps with authority to implement small water resources projects without specific congressional authorization

3.2 Additional Requirements for Corps Funding

The Corps requires that the local sponsor[1] assist in the preparation of the planning, environmental, and design documents to ensure that the communities are involved in the project development and selection process. This requires the local sponsor to have an active role throughout the entire Corps civil works process, which can last up to seven years or more. The local sponsor is also expected to share in the cost of the project planning, design and construction (cost sharing depends on the program, but can be as high as 50 percent of the project). The local sponsor financial contribution can be in the form of in-kind service (e.g. staff time), which would offset the cash contribution requirements, but some of these costs would be in addition to the requirements defined by the Corps process. The local sponsor will incur

[1] A local sponsor is typically the local flood control agency or district responsible for programming drainage and flood control services. Local sponsors share in the cost for planning, designing and constructing a project with the Corps.

project costs that are deemed ineligible and cannot be used as part of the local sponsor financial contribution. These costs are typically project management costs incurred for administrative tasks such as management of staff, preparation of invoices, etc.

3.3 Grants

The County's planning department administers Community Development Block Grants (CDBG) on a yearly basis. This program is funded by the US Department of Housing and Urban Development (HUD) and targets low to moderate-income communities. The funding for CDBG is guaranteed each year but the level of funding varies. A detailed description of the program is included in Appendix A.

4 Additional Outside Funding Sources available through the State

In addition to the sources of funding identified in the FPAR, the State of California (State) provides funding for flood protection and erosion control projects. The California Department of Water Resources (DWR), through the Flood Protection Corridor Program (FPCP), funds watershed protection projects that have agriculture and/or wildlife benefits. For those projects that impact the California Department of Transportation (Caltrans) facilities, a standard cooperative agreement exists that can be used to share drainage project costs. The Governor's Office of Emergency Services (OES) administers grants that fund flood protection projects through the Federal Emergency Management Agency's (FEMA) Flood Mitigation Assistance (FMA) program. The State Water Resources Control Board (SWRCB) provides low interest loans for projects that address non-point source pollution through the State Revolving Fund (SRF) loans. Specifically, communities that must meet National Pollutant Discharge Elimination System (NPDES) Phase II requirements are eligible for the SRF loans. The state funding sources are summarized in Table 3 and detailed in Appendix A.

Table 3 – Additional Funding Sources

Agency	Funding Source
California Department of Water Resources	Flood Protection Corridor Program
California Department of Transportation	Cooperative Drainage Projects
Governor's Office of Emergency Services	Flood Mitigation Assistance Program
State Water Resources Control Board	State Revolving Fund Loan

The District is currently applying for assistance from FEMA through the FMA program. The District has submitted a Floodplain Management Plan (FMP) to the State of California Office of Emergency Services for approval. The FMP identifies several repetitive loss structures throughout the County to be removed from identified floodplains. As described in Appendix A, an approved FMP is required prior to applying for funds from the FMA for implementation of the proposed project. The District should continue its efforts to have the FMP approved and apply for FMA project funds to implement the proposed projects.

4.1 Typical Grant Requirements

Grants provide an opportunity for communities to reduce the total project cost that will be funded through taxes, assessments, and fees. Grant applications often require detailed information

regarding the project, the impact on the community and the environment, and project costs. Additionally, grant distributors prefer projects that provide multiple benefits including environmental restoration. Projects compete for existing funds and a majority of applications are not accepted because of this.

Once a grant is appropriated to a project, the recipient is required to complete additional paperwork including invoices, status reports, and project closeout reports. All these costs are not included as part of the grant and are the responsibility of the recipient. The costs are considered ineligible costs, not included as matching funding for project costs. These costs and application costs can be significant and need to be accounted for when preparing project budgets.

5 Additional Outside Funding Sources available through Private Sources

The FPAR identified several funding sources available through private sources. However, these programs provide funds for projects whose scope of work include environmental restoration, creation of open space, and wildlife habitat improvement projects. Projects that will be identified in the Study may not provide enough of these benefits and therefore private funding sources were removed from further consideration. In addition, the focus of these private sources is to provide funds for non-profit and tax exempt groups.

Additional private sources other than those identified in the FPAR are available for similar projects. A listing of these sources can be found on the California Watershed Database website. The website address is http://watershed.ecst.csuchico.edu/new_spin/spinmain.asp. This website provides a search engine for users to locate funding sources based on the project scope of work.

6 Funding Strategy

There are several funding opportunities available for the projects identified in the Study but the likelihood of receiving enough grant funding for all project costs is unlikely. As stated previously, the lead agency will need to fund the planning of the projects, but it is the responsibility of the community to provide permitting, environmental compliance, design and construction funding. The following case studies present example projects using a combination of funding for a sample project.

6.1 Case Study #1 – Isolated Drainage Project

For an isolated drainage project that eliminates localized ponding or street flooding through the construction of curbs and gutter, drop inlets and culverts, the benefit assessment is a logical choice. A typical funding strategy using a benefit assessment would be as follows:

- The Engineer's Report for the project would be completed by the lead agency within 3 months of start. Programming costs would be funded through the lead agency.
- Concurrently with completing the Engineer's Report, the lead agency would conduct a benefit assessment proceeding for the properties that benefit from the improvements. The benefit assessment would be in place prior to moving forward with permitting, environmental compliance, and design. The lead agency can use the assessment to secure bonds to fund construction.

- Appropriate environmental documentation is completed concurrently with the design within 9 months of start.
- Lead agency advertises project and oversees construction. Duration of the construction would be based on the magnitude of the scope, but most likely would be less than one year.
- The lead agency would continue collecting assessments on the properties until the bonds are paid off.

The total time required to complete a project under this scenario is a minimum of two years.

6.2 Case Study #2 – Comprehensive Drainage Project

For a project that includes the construction of storm drain infrastructure such as curbs and gutters, drop inlets, and storm sewer pipelines, a typical funding strategy using a benefit assessment, and if appropriate, CDBG funds would be as follows:

- An Engineer's Report for the project completed by the lead agency within 6 months of start. Programming costs would be funded through the lead agency.
- Concurrently with completing the Engineer's Report, the lead agency would conduct a benefit assessment proceeding for the properties that benefit from the improvements. The benefit assessment would be in place prior to moving forward with permitting, environmental compliance, and design. The lead agency can use the assessment to secure bonds to fund construction.
- Appropriate environmental documentation is completed concurrently with design within 12 months of start.
- Community can apply for CDBG funds, for low-income communities only, following the establishment of the user fees. Funds are distributed in August of each year and applications are typically due October of the previous year.
- Lead agency advertises project and oversees construction. Duration of the construction would be based on the magnitude of the scope and could vary between one and three years.
- The lead agency would continue collecting property based fees until the bonds are paid off.

The total time required to complete a project under this scenario is a minimum of three years.

6.3 Case Study #3 – Channel Improvements

For a project that includes work within an existing channel, a typical funding strategy using a Corps CAP agreement would be as follows:

- The lead agency, on behalf of a majority of its constituents, sends a letter to the Corps to request a CAP project.
- Corps completes a reconnaissance report to identify the problem and determine Federal interest in a project within 1 year of authorization. The benefiting constituents are not required to cost share in the preparation of the study but will be required to participate in the development through public meetings, coordination meetings with Corps staff, and review of the reconnaissance report.

- Corps completes a feasibility report and environmental document within 3 years of approval of the reconnaissance report. The benefiting constituents are required to pay for 50 percent of the total project costs as well as participate in the completion of both documents.
- Corps completes final design within 3 years of approval of the feasibility report and environmental document. The benefiting constituents are responsible for 25 percent of the project costs.
- The lead agency creates a benefit assessment district concurrently with the completion of final design. The lead agency can use the assessment to secure bonds to fund the benefiting constituents portion of the cost.
- Corps advertises and administers construction contract with construction completed between one and three years after start depending on the magnitude of the projects. The benefiting constituents are responsible for 35 percent of the construction costs.

The total time required to complete a project under this scenario is a minimum of seven years.

6.4 Case Study #4 – Drainage Facility Across Public Highway

For a project that includes construction of drainage facilities across a public highway such as Highway 1, a typical funding strategy using a property-based fee and cost sharing with Caltrans would be as follows:

- An Engineer's Report for the project would be completed by the lead agency within 6 months of start. Caltrans will require a review period for the design, which will impact the duration of the design schedule. Programming costs would be funded through the lead agency.
- Concurrently with completing the planning, the lead agency implements a property-based fee. The fee would be in place prior to proceeding with environmental documentation and design. The lead agency can use the property-based fee to secure bonds to fund construction.
- Lead agency submits a cost share agreement to Caltrans concurrently with completing design. Approval of the cost share agreement can take up to 12 months depending on the project.
- Lead agency advertises project and oversee construction. Duration of the construction would be based on the magnitude of the scope and could vary between one and three years.

The total time required to complete a project under this scenario is a minimum of three years.

7 Community Funding

Each community participating in the Study likely qualifies for one or more funding sources identified. The various funding sources identified for projects are presented in Table 4. A matrix identifying each community's problems and likely funding sources is included in

Table 5. A more detailed analysis of potential funding for each of the communities will be included with the individual community implementation strategy report that will be prepared under separate task of the agreement.

8 Conclusion/Recommendation

The study being prepared under separate task of the agreement with RMC will provide the lead agency, sponsoring agency, benefiting constituents, and/or the District with a summary of existing problems in the six communities as well as recommended solutions. This TM summarizes the various funding sources available to these entities, and the communities to implement those projects. Although several grant and cost sharing opportunities exist with various federal and state agencies, significant work is required by the lead agency and/or local sponsor to complete applications and participate in the process. In other words, these funding sources are not "free money."

Because of the effort required to apply for monies that are not guaranteed, it is recommended that the following two local funding mechanisms for projects be implemented:

- The County implement a development impact fee structure that will help assure that all new development pays fairly for its impacts.
- Subject to demonstrated community support, the lead agency should move forward with a property based fee program that assures that all users of existing drainage systems will contribute to upgrade and maintenance. Because the property based fee requires voter approval, it is recommended that the lead agency does not move forward with an election until a petition signed by more than 50% of property owners is brought to the lead agency.

Detailed recommendations for each of the communities will be included with the Study. This TM only summarizes the various sources of funding unless the funding mechanism can be implemented without a specific project scope.

The District and lead agency should continue to aggressively pursue the funding sources listed in this TM and new funding sources that may become available where communities commit themselves to support of a project. Monies received through grants and cost share can be used to offset costs born by the communities.

Table 4 – Summary of Funding Sources

Number	Agency	Funding Source
1	Community Services Districts, San Luis Obispo County Flood Control and Water Conservation District, other lead agency	Special Property Tax
2	Community Services Districts, San Luis Obispo County Flood Control and Water Conservation District, other lead agency	Benefit Assessment
3	Community Services Districts, San Luis Obispo County Flood Control and Water Conservation District, other lead agency	Property Fee
4	County of San Luis Obispo and/or San Luis Obispo County Flood Control and Water Conservation District	Development Fee
5	County of San Luis Obispo	Community Development Block Grants
6	US Army Corps of Engineers	Flood Hazard Mitigation and Riverine Ecosystem Restoration Program
7	US Army Corps of Engineers	Emergency Streambank and Shoreline Erosion Protection
8	US Army Corps of Engineers	Section 205 Flood Control Project
9	US Army Corps of Engineers	Section 206 Aquatic Ecosystem Restoration
10	US Army Corps of Engineers	Section 208 Snagging and Clearing
11	California Department of Water Resources	Urban Streams Restoration Program
12	California Department of Water Resources	Flood Protection Corridor Program
13	California Department of Transportation	Cooperative Agreement
14	State Water Resources Control Board	Nonpoint Source Implementation Grant Program
15	State Water Resources Control Board	Proposition 13 Watershed Protection Program
16	State Water Resources Control Board	State Revolving Fund Loan
17	Governor's Office of Emergency Services	FEMA Flood Mitigation Assistance Program

Community	Problems	Funding Sources from Table 4															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Cambria	1. Local Drainage	L	H	M	H												H	M
Cayucos	1. Overtopping of Cayucos Creek	L	H	M	H		L	L	L	L	L	L			L	L		M
	2. Local Drainage	L	H	M	H													M
Nipomo	1. Old Town Nipomo in Floodplain	L	H	M	H	M	L	L	L	L	L	L	L		L	L		M
	Local Drainage	L	H	M	H												H	M
Oceano	1. Local Drainage	L	H	M	H	M	L							M			H	M
San Miguel	1. Local Drainage	L	H	M	H	M	L											M
Santa Margarita	1. Overtopping of Santa Margarita and Yerba Buena Creek	L	H	M	H		L	L	L	L	L	L	L	L	L	L		M
	2. Local Drainage	L	H	M	H													M

Legend

H - High opportunity for success
M - Moderate opportunity for success
L - Low opportunity for success

Notes

1. Where no opportunity for success designation is listed, it is not considered likely that the listed funding option would be applicable

Table 5 – Summary of Funding Options

Appendix A
Potential Grant and Loan Programs

(1) Community Development Block Grants

Overview

The County's planning department administers Community Development Block Grants (CDBG) on a yearly basis. This program is funded by the US Department of Housing and Urban Development (HUD) and targets low to moderate income communities. The funding for CDBG is guaranteed each year but the level of funding varies.

CDBG funds can be used for any community development activity such as acquisition of real property, affordable housing activities, construction or rehabilitation of public facilities and improvements, clearance and demolition of buildings, provision of certain types of public services, relocation payments and assistance, removal of architectural barriers, housing rehabilitation, special economic development activities, planning studies and grant administration. A community must meet one of the three national objectives to be eligible for the funding:

- 51% or more of the community households must have incomes below 80% of the County median; or
- The project must aid in the prevention or elimination of slums or blight; or
- The project must address urgent needs that pose a serious, immediate threat to the public health or welfare.

Application Deadline(s)

October of each year

Assistance Provided

The CDBG funds can be used for planning, design, or construction of a project, however, the County planning department's preference is that a project have plans and specifications completed prior to paying out funds. The County is required to report on spending of CDBG funds on an annual basis and therefore most projects that receive CDBG funds are construction projects because funds are more likely to be expended within a year of appropriation. Applications are ranked based on the following criteria:

- Consistency with federal regulations and laws
- Community support
- Seriousness of community development need proposed to be addressed by project
- Degree to which project benefits low-income and very low-income families or persons
- Feasibility of the project to be completed as budgeted within 18 months of appropriation
- Cost effectiveness of funds requested and leveraging of other funds
- Organization's experience or knowledge regarding CDBG requirements

Funding Level	There is no cap on grant application but the County is allocated approximately $500,000 on an average year from HUD for projects similar to those identified in the study. While matching funds are not required; the County and HUD looks most favorably on projects with a matching fund component.	
Legislative Authority	Title I of the Housing and Community Development Act of 1974, Public Law 93-383, as amended	
Contacts	Address:	County of San Luis Obispo Department of Planning and Building County Government Center San Luis Obispo, CA 93408
	Telephone:	(805) 781-5787
	Internet:	http://www.co.slo.ca.us

(2) Flood Protection Corridor Program

Overview

The Flood Protection Corridor Program (FPCP) was established when California voters passed Proposition 13, the "Safe Drinking Water, Watershed Protection and Flood Protection Act" in March of 2000. The FPCP authorized bond sales of $70 million for primarily nonstructural flood management projects that include wildlife habitat enhancement and/or agricultural land preservation. Of the $70 million, approximately $5 million will go to educational programs and administrative costs. Another $5 million was earmarked by the Legislation for the City of Santee, leaving approximately $60 million for flood corridor protection projects throughout the state.

Application Deadline(s)

February of each year

Assistance Provided

The Flood Protection Corridor Program grant can be used for projects that include:

- Non-structural flood damage reduction projects within flood corridors,
- Acquisition of real property or easements in a floodplain,
- Setting back existing flood control levees or strengthening or modifying existing levees in conjunction with levee setbacks,
- Preserving or enhancing flood-compatible agricultural use of the real property,
- Preserving or enhancing wildlife values of the real property through restoration of habitat compatible with seasonal flooding,
- Repairing breaches in the flood control systems, water diversion facilities, or flood control facilities damaged by a project developed pursuant to Chapter 5, Article 2.5 of the Safe Drinking Water, Clean Water, Watershed Protection and Flood Protection Act of 2000,
- Establishing a trust fund for up to 20 percent of the money paid for acquisition for the purpose of generating interest to maintain the acquired lands,
- Paying the costs associated with the administration of the projects.

The project location must also be located at least partially in:

- A FEMA Special Flood Hazard Area (SFHA), or
- An area that would be inundated if the project were completed and an adjacent FEMA SFHA were inundated, or
- A FEMA SFHA, which is determined by using the detailed methods identified in FEMA Publication 37, published in January 1995, titled “Flood Insurance Study Guidelines and Specifications for Study Contractors”, or

- A floodplain designated by The Reclamation Board under Water Code Section 8402(f) *[Title 23, California Code of Regulations, Division 2, Section 497.5(a)],* or a
- Locally designated Flood Hazard Area, with credible hydrologic data to support designation of at least one in 100 annual probability of flood risk. This is applicable to locations without levees, or where existing levees can be set back, breached, or removed. In the latter case, levee setbacks, removal, or breaching to allow inundation of the floodplain should be part of the project.

Funding Level

A grant cap of $5 million per project has been established, however, exceptional projects requesting funding greater than the established cap will be considered on a case-by-case basis.

Legislative Authority

Division 26, Section 79000 Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Act

Contacts

Address: Flood Protection Corridor Program
Department of Water Resources, Division of Flood Management
1416 Ninth Street, Room 1641
Sacramento, CA 95814
Telephone: (916) 654-3620
Internet: http://www.dfm.water.ca.gov/fpcp/

(3) Cooperative Agreement

Overview

The California Department of Transportation (Caltrans) has established a process for cost sharing of drainage projects being implemented by a local agency that will benefit Caltrans facilities.

Application Deadline(s)

None

Assistance Provided

Caltrans has established a process for cost sharing of planning, design, and construction of drainage projects. The process for applying for a Cooperative Agreement is detailed in the Cooperative Agreement Manual.

Funding Level

The cost to Caltrans is based on the benefit received from the project.

Legislative Authority

Streets and Highways Code Sections 114 and 130

Contacts

Address: California Department of Transportation, District 5
50 Higuera Street
San Luis Obispo, CA 93401-5415
Telephone: (805) 549-3111
Internet: http://www.dot.ca.gov/hq/oppd/coop/cooptoc.html

(4) Flood Mitigation Assistance

Overview

FEMA provides funds on a yearly basis for each of the states to administer FMA grants. In California, the Governor's Office of Emergency Services administers these grants. The purpose of these grants is to provide local communities with funds to alleviate reoccurring flooding problems and to reduce claims on the National Flood Insurance Fund (NFIF). There are three types of grants available:

- FMA Planning Grants
- FMA Project Grants
- FMA Technical Assistance Grants

All projects that address flooding issues for areas within a Special Flood Hazard Area (SFHA)[2] are eligible for both FMA Planning and Project grants. In order to receive a FMA Project grant to implement a project to reduce flood losses, a Flood Mitigation Plan (FMP) must be completed by the lead agency and approved by FEMA. The FMA Planning Grant can be used to fund the completion of the FMP.

Application Deadline(s)

None

Assistance Provided

Prior to proceeding with a FMA Project Grant application, the grant applicant must document the flooding problem with the FMP. In addition to describing the flooding problem, the following information is included in the FMP:

- Public involvement
- Coordination with other agencies or organizations
- Flood hazard area inventory
- Review of possible mitigation actions
- State or local adoption following a public hearing
- Actions necessary to implement plan

Following the approval of the FMP, the grant applicant can apply for a FMA Project Grant. This grant is used to implement the specific project identified in the FMP including property acquisition, modification of existing culverts/bridges, elevation of National Flood Insurance Program (NFIP) insured structures, or relocation of NFIP insured structures.

The project must also meet five basic requirements to receive funding:

- Be cost effective – Project costs cannot exceed expected benefits
- Conform with applicable Federal, State, and Executive Orders
- Be technically feasible

[2] Any area within the 100-year flood plain as defined by FEMA is within a SFHA.

- Conform with the FMP
- Be located physically in a participating NFIP community that is not on probation, or benefit such a community directly by reducing future flood damages

Funding Level

- The applicant is responsible for 25% of the costs associated with each grant. The applicant can utilize in-kind services to fund half the applicant's fiscal responsibility. Examples of in-kind services include County staff time, volunteer work, donated supplies, and donated equipment.
- An applicant may receive only one FMA Planning Grant for a maximum of $50,000 in any given five year period.
- An applicant may receive multiple FMA Project Grants but the maximum total of all grants cannot exceed $3.3 million over a five-year period. The $3.3 million value includes monies received from a FMA Planning Grant.

Legislative Authority National Flood Insurance Reform Act of 1994 (NFIRA), Sections 1366 and 1367 (42 U.S.C. 4101)

Contacts

Address:	Governor's Office of Emergency Services P.O. Box 419047 Rancho Cordova, CA 95741-9047
Telephone:	(916) 845-8150
Internet:	http://www.oes.ca.gov http://www.fema.gov/fima/planfma.shtm (Copy of FEMA's Flood Mitigation Assistance Guidance)

(5) SWRCB Revolving Loan Program

Overview

Low interest loans to address water quality problems associated with discharges from wastewater and water reclamation facilities, as well as from nonpoint source discharges and for estuary enhancement.

Application Deadline(s)

Final adoption of State priority list for next State fiscal year in June

Assistance Provided

The purpose of the loan is to assist agencies and local communities meet water quality standards set forth by the Federal Clean Water Act. The loan is for projects associated with discharge from wastewater and water reclamation facilities, as well as from nonpoint sources to conform with NPDES requirements.

Funding Level

The interest rate on an SRF loan is 50% of the interest rate on the most recently sold general obligation bond. The maximum amortization period is 20 years. Loans may cover up to 100% of the cost of planning, design, and construction of NPS pollution control structures and 100% of NPS pollution control programs. The borrower will begin making annual repayments of principal and interest one year after the first disbursement of loan funds.

Legislative Authority

Federal Clean Water Act

Contacts

Address: State Water Resources Control Board
Division of Financial Assistance
1001 I Street, 16th Floor
Sacramento, CA 95814
Contact: Jeff Albrecht

Telephone: (916) 341-5717

Internet: http://www.swrcb.ca.gov/funding/

Appendix B

Excerpts from the San Luis Obispo Creek Watershed, San Luis Obispo County, California, Final Funding Program Analysis Report Prepared by the US Army Corps of Engineers, Los Angeles District October 2001

(1) Continuing Authorities Programs

Overview

Congress has provided the Corps with a number of standing authorities to study and build water resources projects for various purposes, and with specified limits on Federal money spent for a project.

Application Deadline(s)

Specific congressional authorization is not needed

Assistance Provided

- Flood Control Projects – Local protection from flooding by the construction or improvement of flood control works such as levees, channels, and dams. Non-structural alternatives are also considered
- Emergency Streambank and shoreline Erosion – Allows emergency streambank and shoreline protection to prevent damage to public facilities, e.g., roads, bridges, hospitals, schools, and water/sewage treatment plants
- Snagging and Clearing for Flood Control – Local protection from flooding by channel clearing and excavation, with limited embankment construction by use of materials from the clearing operations only.
- Aquatic Ecosystem Restoration – Carries out aquatic ecosystem restoration projects that will improve the quality of the environment, are in the public interest, and are cost effective

Funding Level

- Flood Control Projects - Federal share may not exceed $7 million for each project. Required non-Federal match: 50 percent of the cost of the project for structural measures and 35 percent of the cost of the project for nonstructural measures.
- Emergency Streambank and Shoreline Restoration - Federal share may not exceed $1 million for each project. Non-Federal share of total project costs is at least 25 percent.
- Snagging and Clearing for Flood Control – Federal share may not exceed $500,000 for each project. Required 50 percent non-Federal match including all costs in excess of the Federal cost limitation.
- Aquatic Ecosystem Restoration – Federal share is limited to $5 million. The non-Federal share is 35 percent (including studies, plans and specifications, and construction).

Legislative Authority

- Flood Control Projects – Section 205 of the 1948 Flood Control Act (FCA), as amended
- Emergency Streambank and Shoreline Restoration – Section 14, 1946 FCA, as amended
- Snagging and Clearing for Flood Control – Section 208, 1954 FCA, as amended
- Aquatic Ecosystem Restoration – Section 206, Water Resources Development Act (WRDA) of 1996

Contacts

Address:	US Army Engineer District, Los Angeles PO Box 2711 Los Angeles, CA 90053-2325
Telephone:	(213) 452-5300
Internet:	http://www.spl.usace.army.mil/

(2) Flood Hazard Mitigation and Riverine Restoration Program

Overview

Informally known as "Challenge 21," this watershed-based program focuses on identifying sustainable solution to flooding problems by examining nonstructural solutions in flood-prone areas, while retaining traditional measures where appropriate. Eligible projects will meet the dual purpose of flood hazard mitigation and riverine ecosystem restoration.

Application Deadline(s)

Undetermined

Assistance Provided

Projects include the relocation of threatened structures, conservation or restoration of wetlands and natural floodwater storage areas, and planning for responses to potential future floods.

Funding Level

The non-Federal sponsor is required to provide 50 percent for the studies and 35% for project implementation, up to a maximum Federal allocation of $300 million.

- FY2003 through FY2005 - $50 million for each FY

Legislative Authority

Section 212 WRDA 1999

Contacts

Address: US Army Engineer District, Los Angeles
PO Box 2711
Los Angeles, CA 90053-2325
Telephone: (213) 452-5300
Internet: http://www.spl.usace.army.mil/

(3) Urban Streams Restoration Program – Proposition 13

Overview

The objectives of this program is to assist communities in reducing damages from streambank and watershed instability and floods while restoring the environmental and aesthetic values of streams, and to encourage stewardship and maintenance of streams by the community. Objectives of the program are met by providing local governments and citizen's groups with small grants and technical assistance for restoration projects, to encourage all segments of local communities to value natural streams as an amenity, and to educate citizens about the value and processes taking place in natural streams.

Application Deadline(s)

To Be Determined

Assistance Provided

This program supports actions that:

- Prevent property damage caused by flooding and bank erosion
- Restore the natural value of streams; and
- Promote community stewardship

Funding Level

Grants can fund projects as simple as a volunteer workday to clean up neighborhood steams, or projects as complex as complete restoration of a streams to its original, natural state.

- The Department is in the process of amending the regulations for the program, including raising the grant cap from $200,000 to $1 million
- All potential projects must have two sponsors: a local agency and a community group.

Legislative Authority

- Stream Restoration and Flood Control Act of 1984
- Costa-Machado Water Bond Act of 2000

Contacts

Address: California Department of Water Resources
Urban Streams Restoration program
Attn: Earle Cummings
PO Box 942836
Sacramento, CA 94236-0001

Telephone: (916) 327-1656

Internet: http://wwwdpla.water.ca.gov/environment/habitat/stream/

(4) Proposition 13 Watershed Protection Program

Overview

This program provides grants to municipalities, local agencies, or nonprofit organizations to develop local watershed management plans and/or implement projects consistent with watershed plans.

Application Deadline(s)

To Be Determined

Assistance Provided

Grants may be awarded for projects that implement methods for attaining watershed improvements or for a monitoring program described in a local watershed management plan in an amount not to exceed five million dollars ($5,000,000) per project. At least 85 percent of the total amount in the sub account shall be used for capital outlay projects.

Eligible projects under this article may do any of the following:

- Reduce chronic flooding problems or control water velocity and volume using vegetation management or other nonstructural methods.
- Protect and enhance greenbelts and riparian and wetlands habitats.
- Restore or improve habitat for aquatic or terrestrial species.
- Monitor the water quality conditions and assess the environmental health of the watershed.
- Use geographic information systems to display and manage the environmental data describing the watershed.
- Prevent watershed soil erosion and sedimentation of surface waters.
- Support beneficial groundwater recharge capabilities.
- Otherwise reduce the discharge of pollutants to state waters from storm water or nonpoint sources.

Funding Level

Minimum request of $50,000 and maximum of $5 million

Legislative Authority

Costa-Machado Water Act of 2000

Contacts

Address: Proposition 13 Grant Program – Phase II
Attn: Bill Campbell, Chief
Watershed Project Support Section
Division of Water Quality
State Water Resources Control Board
1001 I Street, 15th Floor
Sacramento, CA 95814

Telephone: (916) 341-5250

Internet: http://www.swrcb.ca.gov/prop13/index.html

(5) Nonpoint Source Pollution Control Program

Overview

The purpose of the NPS Pollution Control Program is "to provide grant funding for projects that protect the beneficial uses of water throughout the State through the control of nonpoint source pollution."

Application Deadline(s)

To Be Determined

Assistance Provided

Grants shall only be awarded for any of the following projects:

- A project that is consistent with local watershed management plans that are developed under subdivision (d) of Section 79080 and with regional water quality control plans.
- A broad-based nonpoint source project, including a project identified in the board's "Initiatives in NPS Management," dated September 1995, and nonpoint source technical advisory committee reports.
- A project that is consistent with the "Integrated Plan for Implementation of the Watershed Management Initiative" prepared by the board and the regional boards.
- A project that implements management measures and practices or other needed projects identified by the board pursuant to its nonpoint source pollution control program's 15-year implementation strategy and five-year implementation plan that meets the requirements of Section 6217(g) of the federal Coastal Zone Act Reauthorization Amendments of 1990.
- The projects funded from the sub account shall demonstrate a capability of sustaining water quality benefits for a period of 20 years. Projects shall have defined water quality or beneficial use goals.

Funding Level

Minimum request of $50,000 and maximum of $5 million

Legislative Authority

Costa-Machado Water Act of 2000

Contacts

Address: Proposition 13 Grant Program – Phase II
Attn: Bill Campbell, Chief
Watershed Project Support Section
Division of Water Quality
State Water Resources Control Board
1001 I Street, 15th Floor
Sacramento, CA 95814

Telephone: (916) 341-5250

Internet: http://www.swrcb.ca.gov/prop13/index.html

Appendix H

REVIEW COMMENTS AND RESPONSE TO COMMENTS

APPENDIX H

RESPONSE TO COMMENTS

Comment 1:
The River Road Pipeline project does not include a main storm drain in Mission Street. The Mission Street Enhancement project, being managed by the County Planning and Building Department, does not include a storm drain along Mission Street. Additional project(s) should be included, and cost estimate(s) provided, which provides for the installation of a storm drain in Mission Street to convey storm water to 11th Street, River Road and 16th Street as required to complete the main proposed drainage systems.

Response 1:

The projects was revised to include the cost for constructing storm drain laterals in Mission Street.