

APPENDIX A

FAQ's (Frequently Asked Questions)

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Flood Control FAQs

Background

Q: What forms the basis of the County's role in flood control?

A: The San Luis Obispo Flood Control and Water Conservation District (The District) is a resource to help individuals and communities in San Luis Obispo County identify and address flooding problems. The District was established in 1945 with the purpose "to provide for control, disposition and distribution of the flood and storm waters of the district and of streams flowing into the district..."

In 1968, Resolution No. 68-223 was adopted and defined the policy role of The District relating to the costs of planning, design, construction, operations and maintenance of drainage and flood control facilities. In accordance with resolution 68-223, The District cannot be responsible for direct funding of community specific mitigation improvements. The District uses its general funding to identify flooding problems, recommend solutions, and help local areas implement recommended solutions.

Q: What are the Constraints of implementing a flood control project?

A: There are three major constraints to implement flood control projects: Policy, Funding, and Environmental. The FAQ's are organized under these three categories to address these constraints.

Policy and Agency Involvement

Q: If the District/County does not pay for flood control improvements, who does?

A: In accordance with state subdivision development law, the property owners that benefit from flood control improvements must fund the improvements. 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.

Q: What are the Drainage Responsibilities of individual cities, Community Service Districts (CSD's) and County Service Area (CSA's)

A: The individual cities within our County exercise control over drainage issues within their boundaries. Some of the cities operate extensive flood control facilities. The District has a regional role and can work with the cities when requested.

CSD's are locally controlled special districts that can also provide drainage and flood control services. In our County, the Oceano CSD and the Los Osos CSD both provide some drainage services.

CSA's can focus the powers of the County to provide specific services to specific areas. CSA's can provide many services including drainage and flood control. These special districts are governed by the Board of Supervisors and receive their funding through collection of voter approved service charges or benefit assessments from the residents or property owners of the specific area served.

Q: What is the role of the Road funding in flood control?

A: The Road Fund and its associated program is a separate and distinct legal entity, and budget, from the County's Flood Control District. It has numerous State statutes (primarily the Streets and Highways Code) that dictate how Road Fund monies may be legally be expended. This 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 the County Roads. The State Controller's Office annually performs an audit of all Road Fund expenditures to ensure compliance with those statutes.

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 private property damage. This includes directing the flow of streams across the roads through culverts and bridges.

In many cases, cost benefit analysis preclude the expenditure of many hundreds of thousands (or millions) of dollars to prevent occasional flooding of certain roadways during periods of unusually intense rainfall. Some County roads will have standing water for short periods of time following rainfall events. This is especially true at various dry creek crossings in rural parts of the County.

Q: It is the District/County that approves and allows construction. Why is the District/County not financially responsible for the flooding problems it allowed to develop?

A: State and County zoning, land use, property development requirements and building codes have changed over the years and continue to change periodically. The rights and restrictions related to a property owner's ability to build on their property involve historic and evolving Federal constitution and programs, State law and County regulations. As new ordinances are adopted and enacted to protect public safety and welfare, homes and structures applying for new building permits must abide by the new ordinances. The County has adopted standards to protect against flood damage to homes located within the 100-year floodplain and all new home construction will meet these standards.

The County is not responsible for the design standards that allowed residents to build within a floodplain if there were no ordinances prohibiting such action. Likewise, the County is not responsible for providing, nor can the County legally provide, private property improvements which benefit private property owners with public funds. The County will not be held financially responsible to implement projects that remove homes from the floodplain, reduce flood damage on private properties or provide property benefiting drainage and flood control improvements (unless there are direct benefits to County facilities) per Resolution No. 68-223. If such were the case, the County/District would be required to pave all roads, update and extend utility infrastructure, provide all drainage and flood control facilities, retrofit all structures to current standards, etc. in

accordance with the latest ordinances and at County taxpayer cost. This is not the purpose of County Government or legal use of public funds.

Q: Why didn't the County/District do something to provide for improvements relating to flood control a long time ago?

A: Due to the nature of flood control, the District addresses flood control and drainage mitigation on a community specific basis. In some cases, The District has held special elections for the implementation of a property tax to provide funding for localized drainage services. If these measures are rejected, these community specific mitigation measures cannot be implemented. The District/County lacks the funds and legal precedence to pay for capital projects. The community's that benefit from flood protection projects should be willing to fund the projects via an assessment or property fee.

The County's building codes, at a minimum, meet the state's uniform building code. The County has the authority to expand and strengthen the codes, but the initial standards are established by the state. The County's authority was limited when homes were first built in the floodplain. However, the County has adopted new standards to protect homes against flood damage. Unfortunately, these standards are not retroactive and the County cannot require an existing home to be improved to meet current standards.

Q: Why did the District/County allow any development in the floodplain in the first place?

A: Federal and State law, and County regulations provide for a reasonable use and development of private property. There has to be legally supportable rationale whereby property development is restricted, controlled and/or prohibited. The County has adopted standards to protect against flood damage to homes and structures located within the 100-year floodplain. The flood damage protection standards are included in the County's Land Use Ordinance (22.07.060 et seq.). One of the criteria applicable to residential development is the finish floor elevations of residences. The finish floor elevation shall be at least one foot over the level of the 100-year flood elevation.

Q: Once specific flood control projects have been identified, what is the strategy to implement these projects?

A. 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 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.

Q: The 1968 policy seems outdated. Has it been looked at more recently?

A: The County Board of Supervisors reviewed and reconfirmed this policy in April 2001. Additional discussion on flood control policies, maintenance and improvement efforts was conducted by the Board of Supervisors on March 28, 2006

Q: What are other agencies with drainage responsibilities?

A: Community Service Districts (CSD's), Community Service Areas (CSA's), Cities, U.S. Corps of Engineers, California Department of Water Resources (DWR), and Caltrans are all agencies that have various flood control and drainage responsibilities.

Funding

Q: How is The District funded?

A: The primary funding source for the Flood Control District is a general property tax allocation, which provides about \$550,000 per year in revenue. In addition, the district receives about \$130,000 per year in interest income from current resources.

Q: I have looked at some of the flood control projects identified by The District/County. The mark ups seem exorbitant! How could these overhead costs be so high?

A: Typical mark-ups are calculated as a percentage of construction. An example of a typical mark up is as follows:

Engineering and Design = 20%

Administrative and Environmental = 40%

Contingency = 20%

In this case, the construction cost is 55% of the total project cost. For a planning level document, multiplying the construction costs by fixed percentages is standard practice because the level of detail available is not sufficient enough to assign costs. The fixed percentages typically range between 60 to 100% of the construction costs, depending on the complexity of the design and environmental documentation and permitting process.

Q: What are some mechanisms to fund flood control improvements?

A: Recommended local funding mechanisms include: grants, taxes, assessments, and property fees based on 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.

Q: Our community would like a fee to be levied that guarantees improvements of drainage facilities. How do these funding mechanisms get implemented?

A: See Attachment 1 for a description of local funding process regarding special taxes, benefit assessments, property-based fees, and development impact fees.

Environmental

Q: What are some environmental constraints encountered for flood control mitigation projects?

A: Biological, cultural resources, land use constraints, and associated environmental permitting criteria are all constraints facing many flood control projects. For flood control projects that have been previously identified, some of these constraints may have already

been addressed. The District may be able to provide assistance in identifying and addressing environmental constraints.

Useful Flood Preparedness Information

Q: What flood control facilities are maintained by the District/County?

A: The County maintains roads and culverts in unincorporated areas of the county.

Q: The creek that flows behind my house is filled with debris and my backyard floods every time it rains. Why won't the County come out and clear the debris?

A: The property owner through which the creek flows is responsible for creek maintenance. The County is responsible for maintaining culvert and creek crossings in public right of ways.

Q: Who can I call in case of a flooding emergency?

County Roads

Conditions	805.781.5252
Maintenance	805.781.4466

Caltrans

Conditions	800.427.7623
Maintenance	805.549.3111

Cities

Arroyo Grande	805.473.5460
Atascadero	805.466.7433
Grover Beach	805.473.4520
Morro Bay	805.772.6261
Paso Robles	805.237.3861
Pismo Beach	805.773.4656
San Luis Obispo	805.781.7220

Community Service Districts

Cambria	805.927.6223
Heritage Oaks	805.227.6230
Los Osos	805.528.9376
Nipomo	805.929.1133
Oceano	805.481.6730
San Miguel	805.467.3388
San Simeon	805.927.4778
Templeton	805.434.4900

In emergency contact numbers, add Roads after hours and weekends, sheriff dispatch 781 4450 and Calif. Highway Patrol 549-3333.

Q: My road is always flooding. How can I find out who maintains it?

A: State highways are maintained by Caltrans. Roads within incorporated cities in the County are maintained by the city. Other, non private roads in the County are maintained by the County Roads Department.

Q: Where can I get sandbags?



Flood Preparedness

SAN LUIS OBISPO COUNTY
OFFICE OF EMERGENCY SERVICES

SANDBAG RESOURCES

PUBLIC LIST

VENDOR	LOCATION	PHONE	TYPICAL STOCK
Cuesta Equipment	4540 Broad Street San Luis Obispo 93401	544 2540	10,000
Double D Feed & Supply	202 Tank Farm Rd San Luis Obispo 93401	543 8410	1,000
San Luis Farm Supply (formerly Loomis & Sons)	1079 El Camino Real Arroyo Grande 93420	489 5514	1000
San Luis Farm Supply	224 Tank Farm Rd San Luis Obispo 93401	543 3751	10,000
San Luis Farm Supply	1108 Paso Robles St Paso Robles 93446	238 1177	500
Templeton Feed & Grain	4th & Main St Templeton 93465	434 1136	30,000
Baron Bag Co.	1215 No Kraemer Blvd Anaheim CA 92806	714 917 0001 800 562 6055	300,000
Sacramento Bag Co	260 Storey Rd Corralitos CA 95076	800 287 2247 831 728 9359 FAX 728 4672	2 mil
Southwest Bag.	1380 6th St LA CA 90021	213 622 6122	100,000

Q: What are some recent flood control initiatives of The District?

A: The District coordinated the completion of a six community drainage study in 2003/2004. In 2006, The District requested \$3,000,000 in funding to construct roads related improvements documented in the six community drainage study, and \$200,000 for Public Works Special Services budget to facilitate non-roads related Flood Control Improvements. A Proposition 50 grant of \$75,000 was awarded to establish a documented process for both County staff and the public to use to bridge the gap from knowing what needs to be done to actually getting the indicated improvements in the ground. \$180,000 was contributed to the Resource Conservation District to make possible an alternatives analysis for future operation and improvements of the Flood Control Zone 1 and 1A. The District has worked with several local communities to identify potential drainage improvements and provide assistance, within its ability, in the design and implementation of flood control improvements.

APPENDIX B

Community Specific Flood Control Projects (Executive Summaries)

1. Cambria
2. Cayucos
3. Nipomo
4. Oceano
5. San Miguel
6. Santa Margarita

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San Luis Obispo County
Flood Control and
Water Conservation District



Cambria Drainage and Flood Control Study

FINAL REPORT
FEBRUARY 2004

RMC

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

in Association with:



EXECUTIVE SUMMARY

This report is a summary of findings, conclusions and recommendations of the Drainage and Flood Control Study conducted for the Community of Cambria. 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 funding 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. 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 the 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.

Existing Drainage Problems

The combination of the area's steep topography, lack of underground drainage facilities, and location of residential parcels below the street grade has resulted in localized poor drainage and/or flooding around some residences, buildings, and roadways. The magnitude of flooding varies by the districts in Cambria and by location in each district. Drainage from a number of uphill lots flows along the edge of street pavement and drains onto lower lots, creating flooding and erosion problems. Drainage problems also exist where curbs are present, but the topography creates conditions where lots adjacent to the roadway are much lower than the roadway surface. This allows street drainage flowing at the curbside to enter the residential lots at the lowered curb section along the driveway entrance. Many unpaved roads are also subject to sheet and rill erosion during storm events.

Proposed Projects

The major constraint identified in local flooding issues was the lack of suitable conveyance facilities for storm water runoff. In most areas, storm water flows as surface flow in streets, ditches, and backyard areas. Stormwater conveyance is widely varied, due to changes in roadway slope and cross section, the presence or lack of curb and gutters, and the presence or lack of existing culverts and drainage channels. Most drainage issues were the result of upstream concentrated flows entering downstream lots due to a lack of storm drain facilities to convey flow.

The proposed solution is the construction of a number of small projects to resolve the flooding problems. Several potential projects have been developed to address drainage and flooding issues, and are shown by district in Figures 3 through 13 in Appendix A. A combination of the projects will be required to eliminate all of the drainage problems for the community. However, the intent is that each alternative will work independently to solve localized problems. The proposed projects primarily include the installation of paved roadways with rolled asphalt berms to keep storm runoff within the public right-of-way and off residential property. Storm runoff would then be collected in drop inlets or catch basins and be conveyed in an underground pipe to its terminal discharge point. In some locations, roadside ditches and drainage channels are proposed in place of storm drains. The goal of each project was to divert runoff away from topographic low points (generally a residential property) into a storm drain to effectively convey the flow to a creek or the ocean.

Flooding problems along Santa Rosa Creek in the West Village are being addressed by the construction of a by-pass channel for Santa Rosa Creek, as part of the Cambria Flood Control Project. Therefore, drainage and flooding problems are not discussed in this report. The by-pass channel will allow overflows to move slowly through the by-pass channel and then rejoin the Santa Rosa Creek downstream without overtopping Cambria Drive or Santa Rosa Creek. The project restores controlled flooding to the historic floodplain of Santa Rosa Creek while protecting the West Village from overflows of Santa Rosa Creek.

Table ES-1 summarizes the proposed alternatives by zone and also provides estimated costs and implementation timeframe. The total cost of all the projects is approximately \$6.7 million. This total includes street and berm improvements totaling approximately \$2.5 million that would be paid by the benefiting home owners through the Cooperative Roads Improvement Program. The storm drain, culvert, and road side ditch improvements and related appurtenances have an estimated cost of approximately \$4.2 million

Table ES-1: Summary of Alternatives

DISTRICT ¹	PROJECT	PROBLEM AREA	PROPOSED MITIGATION	COST ²	APPROXIMATE IMPLEMENTATION TIME FRAME ³
Marine Terrace	1	Saint Thomas Ave. and Emmons Dr.	Replace culverts, install storm drain	\$107,000	3.5 years
Marine Terrace	2	Marlborough Lane and Drake St.	Pave street, install storm drain, berms and drop inlets	\$643,000	4 years
Marine Terrace	3	Newhall Ave. and Randall Dr.	Berm street, install drop inlet and storm drain	\$127,000	3.5 years
Lodge Hill South	5	Burton Dr., Orville Ave., and Ardath Dr.	Install storm drain, berms, drop inlets, and outfall	\$657,000	4 years
Lodge Hill South	6	Bradford Rd. and Orville Pl.	Pave and berm street	\$273,000	3.5 years

DISTRICT ¹	PROJECT	PROBLEM AREA	PROPOSED MITIGATION	COST ²	APPROXIMATE IMPLEMENTATION TIME FRAME ³
Lodge Hill South	7	McCabe Dr.	Install berms	\$18,000	3 years
Lodge Hill South	8	Cowper, Radcliff Ave., Langton St. and Kenneth	Pave and berm streets, install storm drain, drop inlets and culverts	\$1,850,000	3.5 years
Lodge Hill South	9	Various Locations	Berms streets and install culverts	\$768,000	3 years
Lodge Hill North	10	Wilton Dr.	Install roadside ditches, culverts, and storm drain	\$238,000	3.5 years
Lodge Hill North	11	Ramsey St.	Pave and berm street, install drop inlets, storm drains and energy dissipator	\$347,000	3.5 years
Lodge Hill North	12	Various Locations	Berm streets	\$90,000	3 years
Pine View	13	Eton Rd. and Wood St.	Drop inlet, storm drain, outfall, and erosion protection	\$263,000	5 years
Pine View	14	Martindale	Berm street	\$40,000	3 years
Park Hill	15	Dorset St. and Cambridge St.	Berm multiple streets, install storm drain, drop inlets	\$482,000	3.5 to 4 years
Park Hill	16	Pembroke	Berm street, install drop inlet and storm drain	\$103,000	3 years
Happy Hill	18	Canterbury Lane	Install berm, drop inlet and storm drain	\$168,000	3 years
Happy Hill	19	Various Locations	Install berms	\$242,000	3 years
Happy Hill	20	Suffolk St.	Install berm, cross drain	\$273,000	3 years

Notes:

1: See Figure 2 for delineation of the districts in Cambria and Figures 3 through 13 for the proposed projects.

2: ENR CCI for Los Angeles (February 2003) = 7,566. Includes 20% for Engineering and Design, 60% for Administrative and Environmental, and a 20% Contingency. Typical estimates used for County Overhead & Support Costs for Construction Project Planning. Use 100% cumulative markup on construction costs for Coastal Zone Projects. Percentages provided by County (Typical to all estimates in this report).

3: See Table 6-1 for detailed milestone durations. If a lead agency is in place, then decrease the duration by approximately 9 to 12 months.

ADDITIONAL RECOMMENDATIONS

Elevation Requirements and Mountable Berms

Existing homes located below street grade and whose driveways slope down away from the road may experience flooding in the garage or home. This is because without an adequate curb/berm, the driveway may act to convey runoff from the street above to lower elevations and sometimes into the garage or home. It is recommended that Cambria mandate the installation of a County standard mountable berm for all existing driveways/accesses to structures which are below the edge of pavement. It is also recommended that Cambria and the County Planning Department develop a design guideline that recommends the floor and garage elevation

for all new home construction be greater than the adjoining street grade. Driveways should slope down away from the home, towards the road.

It is recognized that the unique topographic nature of Cambria and the configuration of some infill lots will render this suggestion impractical or extremely difficult to implement at some locations. If some of Cambria's down sloping lots cannot be built above street level, then an alternative to protecting a structure's contents would be to build the access points (e.g. doors and garage openings) a minimum of one foot above adjacent grade so that flooding on the property will not encroach into the doorways. This design guideline will prevent flooding from entering into doorways and protect a structure's contents.

Minimize Storm Runoff from Homes

By diverting stormwater from impervious areas such as roofs, walkways and driveways, and reusing whenever possible, runoff that flows to streets can be greatly reduced. This can be achieved by directing rain gutter downspouts to landscaped areas, swales or infiltration basins on private property where water can percolate into the ground.

Development on Steep Terrain

For properties that contain drainage courses that convey runoff from uphill streets and lots, it is encouraged that a drainage easement be retained on the lower properties so that appropriate drainage facilities can be installed to convey runoff to the street below. The County's Department of Public Works should develop a design guideline standard for a catch basin and down drain to convey water from an uphill lot, through the downhill lot and eventually discharging to the street below. The County's Planning and Building Department should also provide the leadership and encouragement to property owners to dedicate drainage easements or to develop an appropriate reimbursement mechanism for uphill owners to compensate downhill owners for the easement.

Improve Drainage Systems as the Community Develops

New development is expected to substantially increase storm water flows in the community. The drainage impacts associated with increased development will be most pronounced in the Lodge Hill area where many of the roads are unpaved. 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 Cambria be used to fund drainage improvements for areas that will be most impacted by future development. These areas are typically the topographic low points within a drainage sub-basin or district. The development fees collected to date should also be used to fund projects that mitigate for existing problems created by recent development (e.g. flooding at Eton Road and Wood Drive). 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.

Maintenance on Existing Facilities

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 should rest with the owners of the property through which the drainage channels pass since the County is not

responsible for maintaining facilities on private property. If the drainage channels pass through public property, such as County roads, then the County's maintenance department is responsible for removing impediments. The District should continue to provide leadership, advice and encouragement to property owners and local agencies to assume these responsibilities.

Rolled Asphalt Berms

The community should consider incorporating the Caltrans Type E 4 mountable berm into the road section for all new and substantially rehabilitated roads as the standard for all new roadway work where roadway drainage containment is considered necessary in the residential area. Appendix I contains a typical cross section detail of the mountable berm.

Formation of a Drainage Facility Maintenance Department

It is recommended that a facility maintenance district be formed to better maintain the drainage infrastructure in Cambria. Responsibilities of the new maintenance district would include: (1) being the contact point for all resident complaints regarding drainage infrastructure in the community; (2) keeping an organized database of all new drainage infrastructure in the community including the size and capacity of culverts and storm drains, even if this infrastructure is installed by private property owners; (3) keeping a regular maintenance schedule that may involve multiple maintenance visits where needed; and (4) responding to drainage infrastructure repairs as needed. Having a localized facility maintenance district will make it easier to maintain drainage infrastructure as needed throughout the community.

Neighbor Coordination

Many reported problems were caused by residents blocking historical drainage courses or removing drainage lines that conveyed runoff from higher elevations to lower elevations. These drain lines were installed by private residences in order to move water from the street or their property to public right of way. Filling in or removing drain lines causes runoff to pond in the back or side yards of the upstream properties. Neighbors should organize to ensure that storm runoff flows unimpeded to public right of way. Filling in drainage courses or removing drain pipes is discouraged by the District.

Implementation Strategy

The most effective approach for 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 Cambria totaled approximately \$6.7 million. This total includes street and berm improvements totaling approximately \$2.5 million that would be paid by the benefiting home owners through the Cooperative Roads Improvement Program. The storm drain, road side ditch improvements and related appurtenances have an estimated cost of approximately \$4.2 million. If the lead agency in Cambria established a funding source to pay for the storm drain, culvert and roadside ditch improvements (excluding the street and berm improvements), approximately \$298,000 per year would have to be generated by the community in order to build all the projects and pay off a municipal bond¹.

¹ Assumes a municipal bond rate of 5 percent, paid off over a period of 25 years.

Community Financial Support

If the residents benefiting from these projects calculate that their average annual damages due to flooding are less than the assessment or fee necessary to mitigate the flooding, then the community might conclude that risking flood damages is economically beneficial. In other words, the benefits gained are less than the cost of the project. A discussion of flood protection benefits versus project costs should be conducted with the community in order to measure the interest in implementing a project. The discussion would explore whether the community is willing to financially support a project if the costs exceeded the benefits.

The reader should note that it will be difficult to pass an assessment or fee in any of the districts when vacant properties in Cambria cannot build due to the water service moratorium.

IMPLEMENTATION STEPS

It is recommended that the following implementation steps, in general, be followed for the proposed projects. It is assumed that a community supported agency/zone would serve as the lead agency and assume control of the project at completion. **A lead agency in Cambria has not been designated, but it is recommended that the CCSD serve as the lead agency. The CCSD has formally commented that it is not prepared to take the lead agency role on the proposed projects.**

- Fund and complete a Basis of Design Report² within 9 to 15 months of start (depends on complexity of project)
- Conduct benefit assessment or property based fee proceedings
- Design project, prepare environmental documents and resource agency permits
- Advertise for construction
- Construct project

The phasing of storm drain projects would depend on the residents' desire to implement projects within their district. Each proposed project works independently to solve localized problems within a specific district. Therefore, neighbors within a district can organize to implement a project that benefits their area. The primary difference in the implementation steps for each project involves the complexity and the level of CEQA documentation required for storm drain projects. The majority of projects qualify for Class 1 CEQA categorical exemption because the alternatives consist of minor alterations to existing public facilities and do not have the potential to affect sensitive resources.

SCHEDULE FOR IMPROVEMENTS

The average duration for a storm drain project is approximately three to four years, depending on the length of pipeline, level of CEQA documentation, permitting requirements and environmental mitigation requirements. 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 Cambria Drainage and Flood Control Study 2003 represents a collaborative effort between San Luis Obispo County, the Community of Cambria, Raines, Melton & Carella, Inc., Questa Engineering Corporation and Essex Environmental. We would like to acknowledge and thank the following key personnel from the County and the North Coast Advisory Council whose invaluable knowledge, experience, and contributions were instrumental in the preparation of this report.

Paul Skartvedt – North Coast Advisory Council Member
Walter Fitzhugh – North Coast Advisory Council Member
Noel King – Public Works Director
Glen Priddy – Deputy Director Engineering Services
George Gibson – Design Engineer Public Works
Dean Benedix – Project Manager Public Works
Paavo Ogren – Deputy Public Works Director

San Luis Obispo County
Flood Control and
Water Conservation District



Cayucos Drainage and Flood Control Study

FINAL REPORT

JANUARY 2004

RMC

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

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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 Cayucos. 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 funding to identify water related issues, to determine solutions to those 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. 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 the 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.

Existing Drainage Problems

The combination of the area's steep topography, lack of underground drainage facilities, and location of residential parcels below the street grade has resulted in localized poor drainage and/or flooding around some residences, buildings, and roadways. The most serious flooding in the community takes place in the floodplain of Cayucos Creek west of Highway 1, bounded by the mobile home park on the north and Cayucos Drive on the south. Extensive flooding occurs due to flows from the creek overtopping the banks, and the inability of the local drainage to enter the creek due to high water levels.

A number of nuisance drainage and flooding problems occur throughout Cayucos due to the topography and the lack of a consistent, organized network of drainage facilities within the community. Drainage from a number of uphill lots flows along the edge of street pavement and drains onto lower lots, creating flooding and erosion problems. However, drainage problems also exist where curbs are present, but the topography creates conditions where lots adjacent to the roadway are much lower than the roadway surface. This allows street drainage flowing at the curbside to enter the residential lots at the lowered curb section along the driveway entrance.

Proposed Projects

The major constraint identified in local flooding issues was the lack of suitable conveyance facilities for storm water runoff. In most areas, storm water flows as surface runoff in streets, ditches, and backyard areas. Stormwater conveyance is widely varied, due to changes in roadway slope and cross section, the presence or lack of curb and gutters, and the presence or lack of existing culverts and drainage channels. Most drainage issues were the result of upstream concentrated flows entering downstream lots due to a lack of storm drain facilities to keep runoff away from private residences.

The proposed solution to the problems is the construction of a number of small project alternatives, or groups of smaller projects, to resolve the flooding problems. Several potential projects have been developed to address drainage and flooding issues, and are shown by drainage zone on Figures 8 through 14 in Appendix A. A combination of the projects will be required to eliminate all of the drainage problems for the community. However, the intent is that each alternative will work independently to solve localized problems.

ZONE 3 IMPROVEMENTS

The most serious flooding in the community takes place in Zone 3 at the merging floodplains of Cayucos and Little Cayucos Creek west of Highway 1. Drainage from a tributary to Cayucos Creek flows into this area and has also caused flooding. To reduce the flooding in this area, a new storm drain pipeline could be constructed to convey the Cayucos Creek tributary flows directly to the creek, rather than flowing in the roadside channels and as overland flow across the floodplain area. Constructing the diversion pipeline to route tributary flow away from the local drainage system to Cayucos Creek would reduce the 10-year storm runoff by approximately 83 percent. This project would reduce flood flows in the B Street area and protect the neighborhood from more frequent rain events, but would not protect homes and businesses from larger storm events which cause overtopping of the Cayucos Creek banks. A levee and pump station would be required to protect the B Street area against flooding in these conditions. If the pump station is not constructed, then flooding would continue in the B and Ash Street area for storms greater than a 10-year event.

ZONES 5 THROUGH 21

A number of nuisance drainage and flooding problems occur within the drainage zones due to the topography, the lack of an underground storm drain system, and the lack of a consistent, organized network of curbs and gutters within the community. An underground storm drain conveyance system would reduce the amount of overland flow runoff in downstream areas, consequently reducing the flooding problems created with overland flow.

The development of a consistent curb and gutter network could also reduce nuisance flooding. However, drainage problems also exist where curbs are present and the topography provides conditions where lots adjacent to the roadway are much lower than the roadway surface. This allows street drainage flowing at the curbside to enter the residential lots at the lowered curb section along the driveway entrance. On streets where curbs are currently established, curbs and gutters should be required for infill development to create a continuous system and to prevent flow onto properties.

Table ES-1 summarizes the proposed alternatives by zone and also provides estimated costs and implementation timeframe.

Table ES-1: Summary of Alternatives

DRAINAGE ZONE ¹	PROJECT	PROBLEM AREA	PROPOSED MITIGATION	COST ²	APPROXIMATE IMPLEMENTATION TIME FRAME ³
3	Diversion Pipeline	B and Ash Street	Construct diversion pipeline to route Cayucos Creek tributary flow directly to creek.	\$420,000	6 years
3	Levee and Pump Station	B and Ash Street	Construct a levee to contain 100-year flood flows and pump station to convey local runoff into creek.	\$1,880,000	7 to 8 years
5	Storm Drain and Inlets	Ocean Ave. and Pacific Ave.	Construct storm drain to relieve flooding at intersection of Ocean and Pacific Ave.	\$117,000	3 to 4 years
8	Storm Drain and Inlets	6 th St. and 8 th St. from St. Mary's Ave. to Pacific Ave.	Construct storm drain to relieve flooding originating in Park Ave. and Saint Mary's.	\$1,127,000	3 to 4 years
9	Storm Drain and Inlet	10 th St. from Cass Ave. to Pacific Ave.	Construct storm drain to relieve flooding experienced on 10 th St.	\$148,000	3 to 4 years
10	Storm Drain and Inlets	13 th St. from Cass Ave. to Pacific Ave.	Construct storm drain to relieve flooding experienced on 13 th St	\$192,000	3 to 4 years
11	Storm Drain and Inlets	Pacific Ave. from 15 th to 17 th St.	Construct storm drain to reduce overland flow in Pacific Ave.	\$152,000	3 to 4 years
12	Storm Drain, Inlets and Private Easement	Circle Dr. and Cass St.	Construct storm drain to eliminate sump at low point on Circle Dr.	\$83,000	3 to 4 years
15	Storm Drain and Inlets	Stuart Ave. from Richard Ave. to ditch	Construct storm drain to relieve flooding and overland flow on Stuart Ave.	\$192,000	3 to 4 years
16	Storm Drain, Inlets and Outfalls	Hacienda Dr.	Construct storm drains in two areas of Hacienda Dr. to relieve drainage along Ocean Ave. and Cerro Gordo Ave, and also east side of Hacienda Dr.	\$407,000	3 to 4 years
19	Storm Drain, Inlets and Easement	Gilbert Ave., Shearer Ave. and Mayer St.	Construct two new storm drains to relieve flooding caused by hillside runoff on Gilbert and Shearer Ave. Reduce flooding on Mayer from flows across Highway 1.	\$273,000	3 to 4 years
21	Storm Drain, Inlets and Easement	Between Gilbert and Ocean Ave.	Construct a storm drain to convey runoff generated from the hillside east of Gilbert.	\$263,000	3 to 4 years

Notes:

1. See Figures 8 through 14 for delineation of drainage zone and proposed alternatives.
2. ENR CCI for Los Angeles (February 2003) = 7,566. Includes 20% for Engineering and Design, 60% for Administrative and Environmental, and a 20% Contingency. Typical estimates used for County Overhead & Support Costs for Construction Project Planning. Use 100% cumulative markup on construction costs for Coastal Zone Projects. Percentages provided by County (Typical to all estimates in this report).
3. See Tables 6-2 and 6-4 for detailed milestone durations.

ADDITIONAL RECOMMENDATIONS

FEMA Community Rating System

Cayucos should participate in the Community Rating System (CRS). The CRS gives credit points for any of several designated activities within four distinct categories (Public Outreach, Mapping and Regulations, Flood Damage Reduction, and Flood Preparedness). As points are accumulated, a community will receive one class reduction starting at class 9 all the way down to class 1. Each class translates to an additional reduction in insurance premiums of five percent for flood insurance policies within the special flood hazard area of that community.

Maintenance on Existing Facilities

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 should rest with the owners of the property through which the drainage channels pass since the County is not responsible for maintaining facilities on private property. 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.

Elevation Requirements and Mountable Berms

Homes located below street grade and whose driveways slope down away from the road may experience flooding in the garage or home. This is because without an adequate curb/berm, the driveway may act to convey runoff from the street above to lower elevations and sometimes into the garage or home. It is recommended that Cayucos and the County Planning Department mandate that the floor and garage elevation for all new home construction be one foot greater than the adjoining street grade. Driveways should slope down away from the home, towards the road. It is also recommended that Cayucos mandate the installation of a County standard mountable berm for all driveways/accesses to structures which are below the edge of pavement.

Formation of a Drainage Facility Maintenance Department

It is recommended that a facility maintenance district be formed to better maintain the drainage infrastructure in Cayucos. Responsibilities of the new maintenance district would include: (1) being the contact point for all resident complaints regarding drainage infrastructure in the community; (2) keeping an organized database of all new drainage infrastructure in the community including the size and capacity of culverts and storm drains, even if this infrastructure is installed by private property owners; (3) keeping a regular maintenance schedule that may involve multiple maintenance visits where needed; and (4) responding to drainage infrastructure repairs as needed. Having a localized facility maintenance district will make it easier to maintain drainage infrastructure as needed throughout the community.

Consolidate Urban Services

Consolidate urban services and facilities in Cayucos into a single comprehensive service district as recommended in the Estero Area Plan (updated November 2002). If the community, County and LAFCo work to consolidate services, then drainage should be included in the charter of this new district.

Neighbor Coordination

Many reported problems were caused by residents blocking historical drainage courses or removing drainage lines that conveyed runoff from higher elevations to lower elevations. These drain lines were installed by

private residences in order to move water from the street or their property to public right of way. Filling in or removing drain lines causes runoff to pond in the back or side yards of the upstream properties. Neighbors should organize to ensure that storm runoff flows unimpeded to public right of way. Filling in drainage courses or removing drain pipes is discouraged by the District.

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 Cayucos totaled approximately \$5.25 million. If the lead agency in Cayucos established a funding source, approximately \$370,000 per year would have to be generated by the community in order to build all the projects and pay off a municipal bond¹.

Community Financial Support

If the residents benefiting from these projects calculate that their average annual damages due to flooding are less than the assessment or fee necessary to mitigate the flooding, then the community might conclude that risking flood damages is economically beneficial. In other words, the benefits gained are less than the cost of the project. A discussion of flood protection benefits versus project costs should be conducted with the community in order to measure the interest in implementing a project. The discussion would explore whether the community is willing to financially support a project if the costs exceeded the benefits.

IMPLEMENTATION STEPS

It is recommended that the following implementation steps, in general, be followed for the Zone 3 diversion pipeline and the levee/pump station system improvements. It is assumed that a community supported agency/zone would serve as the lead agency and assume control of the project at completion. A lead agency in Cayucos has not been designated.

- Fund and complete a Basis of Design Report² within 15 months of start (12 months for the diversion pipeline only)
- Initiate coordination with Caltrans regarding a cooperative agreement for the diversion pipeline improvements
- Conduct benefit assessment proceeding for the properties that benefit from the improvements
- Design project, prepare environmental documents and resource agency permits
- Advertise for construction
- Construct project

Storm Drain Improvements in other Zones

The phasing of storm drain projects would depend on the residents' desire to implement projects within each zone. Each proposed alternative works independently to solve localized problems within a specific zone. Therefore, neighbors within a drainage zone can organize to implement a project that benefits their area. The implementation steps outlined above for Zone 3 would generally be followed for the storm drain projects. The

¹ Assumes a municipal bond rate of 5 percent, paid off over a period of 25 years.

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.

exceptions include the level of CEQA documentation required for storm drain projects will not be as rigorous. The majority of projects qualify for Class 1 CEQA categorical exemption because the alternatives consist of minor alterations to existing public facilities and do not have the potential to affect sensitive resources. A major difference from a funding perspective is that storm drains would likely be funded via a property based user fee (in lieu of an assessment) because the homes within a drainage zone contribute runoff conveyed in the storm drain and should therefore contribute a *pro rata* share of the costs. The duration to design and permit a storm drain project should be less than the Zone 3 improvements.

SCHEDULE FOR IMPROVEMENTS

The estimated duration for Zone 3 improvements is approximately seven to eight years. The duration reduces to six years if only the diversion pipeline is implemented. The duration includes time for identifying a lead agency and developing community support. The average duration for a storm drain project in the other zones is approximately three to four years, depending on the length of pipeline, level of CEQA documentation, permitting requirements and environmental mitigation requirements. Chapter 6, “Implementation Strategy” includes more detail regarding task durations.

ACKNOWLEDGEMENT

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

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Ralph Wessel - Cayucos Citizen's Advisory Council Member
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San Luis Obispo County
Flood Control and
Water Conservation District



FEBRUARY 2004

Nipomo Drainage and Flood Control Study

FINAL REPORT

RMC

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

In Association with:



FINAL REPORT ADDENDUM

This addendum is in response to the Nipomo Community Advisory Council (NCAC) Review Committee's comments dated February 10, 2004, on the Drainage and Flood Control draft report.

Executive Summary Comments

Comment 1: The enforcement of Building Code requirements should be used to mitigate existing structures that are now subject to flooding problems. For example, on page v, under "Elevation Requirements and Mountable Berms," we recommend that the county clarify a policy that designate as 'Existing Non-conforming' all structures and out-buildings in the flood zone of Nipomo's Olde Towne that have been constructed at a grade of less than one foot greater than the adjoining grade. That county policy should state that such non-conforming structures could not be altered, modified, remodeled, added to, or improved upon, if the reasonable cost for such "added work" to the existing structures is greater than, say, \$10,000. If the cost for such work is \$10,000 or greater, then those structures would be required to be razed and a new building permit would required for a replacement structures that conform to the requirement of one foot greater than the adjoining grade. All other current building code requirements would also apply to the new building permit.

- a. We believe that the property owner should be allowed to propose on-site grading and flood control improvements of \$10,000 or greater cost value, but not less than the cost proposed for the proposed added work. If such grading and flood control work is proposed, and is subsequently approved by the county, we believe that the desired "added work" should be appropriately processed for a building permit, as long as the approved grading and flood control work is performed as a mitigation measure on the site.

Response 1: As written in Section 3.6.3 of the final report, the County has adopted standards to protect against flood damage to homes located within the 100-year floodplain. The flood damage protection standards are included in the County's Land Use Ordinance (22.07.060 et seq). The criteria applicable to residential development in general are:

- Structures shall not be built in the "floodway." The floodway is defined as the portion of the floodplain necessary to convey the 100-year flood if the channel is improved to County criteria.
- Finish floor elevations of residences shall be (at least) one foot over the level of the 100-year flood elevation.

Many homes located within the 100-year floodplain were built prior to adoption of this ordinance. These homes are most susceptible to flooding because they were typically built at grade and are often located below the adjoining street grade.

San Luis Obispo County possesses the authority to pass new land use ordinances that requires all residential dwelling units located within the FEMA 100-year

flood hazard zone (100-year floodplain) to conform to the County's current Land Use Ordinance (22.07.060 et seq). A new ordinance could require that all residential single or multifamily dwelling units undergoing remodeling improvements that are valued at \$10,000 or greater than the current property value (or a certain percent or greater than the current property value) would need to conform to the County's Land Use Ordinance (22.07.060 et seq). The County's Department of Planning and Building would investigate the cumulative impacts of passing such an ordinance in Olde Towne and other communities in the County prior to drafting a staff recommendation to the Board of Supervisors.

The County Board of Supervisors received and discussed the final six community drainage and flood control studies at their Board meeting on March 9, 2004. As part of their action, the Board directed the County Public Works and Planning and Building staff to jointly review and report on recommendations relative to County drainage regulations, management, planning, processing and approval, including possible modifications to current rules, ordinances and policies. This item will be included in the staff review of existing ordinances and policies.

Comment 2: On page iv, in Table ES-2, under Tributary 1, Near Sea and Mallagh Streets, the solution recommended in the report is too segmented at Sea and Burton. The report should re-consider its recommendation and provide for a single conduit rather than a series of small segments.

Response 2: If properly maintained, the existing roadside drainage ditches should possess sufficient capacity to meet the County's current standard for minor waterways (minor waterways have a drainage area of less than one square mile and are designed for an average storm recurrence interval of 10 years with freeboard). The proposed culverts at Mallagh/Sea and Burton/Sea are intended to increase the conveyance capacity of the crossings, and to prevent runoff from backing up in the roadside ditches and causing shallow flooding at roadway intersections. Constructing a continuous storm drain in Burton and Sea Street would convey storm runoff underground and would also be designed to convey the 10 year storm. A storm drain would require far less maintenance when compared to an open roadside ditch. From a capacity perspective, an underground storm drain and a properly maintained drainage ditch should be equal.

Constructing 700 feet of 30-inch diameter storm drain to replace existing roadside drainage ditches would cost approximately \$126,000. The total project cost (includes engineering, design, administrative, environmental and contingency) is approximately \$227,000. Compared to the cost in Table ES-2 for improving existing roadside drainage ditches and installing culverts at road intersections, installing a new storm drain would more than double the total project cost and provide minimal benefit to storm runoff conveyance.

Comment 3: On page vi, under: "Modify Existing Policies...", we strongly agree with the recommendation that the County modify existing planning standards and policies.

Response 3: Comment noted.

Comment 4: On page vi, under: “Modify Existing Policies...”, we strongly agree with the statement that “County Drainage Standards and Policies specify the responsibility of onsite runoff management as belonging to residents; however, no specific sanctions and no consistent procedure are available to *[oversee, provide necessary guidance and engineering control, and]* enforce maintenance of local facilities.” [The words in italics represent our additional comment to the quotation].

Response 4: The County does provide guidance to residents and businesses on sizing storm detention facilities. As discussed in Section 3.9.4, the County’s handout “Drainage Plan Required in Nipomo” generally describes the drainage requirements for the Nipomo area. This section of the report also recommends that the handout include education material on proper maintenance of drainage facilities on private property, and also the consequences of filling in or neglecting infiltration basins.

The County has served as a leader in providing guidance to the community to improve drainage and prevent flooding. However, without enforcement authority, the County lacks the legal nexus requiring that homeowners properly manage onsite runoff. Final report section 3.9.2.2.2 discusses and recommends increased enforcement authority for drainage issues. This item also will be included in the County staff review of existing ordinances and policies.

Comment 5: On page vi, under “Modify Existing Policies ...”, we strongly agree with the statement that planning standards and policies need to be implemented. We recommend the establishment of a task force of local Nipomo residents, or of the Nipomo Community Advisory Council (NCAC), that will work with the county and local community representatives to explore low cost interim watershed maintenance and management solutions, such as: a license agreement, or easement with upstream landowners to use agricultural land for the installation of check basins, and retention basins to better manage storm runoff.

Response 5: If the community supports the construction of detention basins to store peak runoff from large storm events, then early coordination with landowners is imperative to securing available land. The proposal for a detention basin is a long-term, permanent solution. The commenter proposed a license agreement or easement as a low cost interim watershed maintenance and management solution. It is unclear to the project team why a license agreement or easement is considered a low cost interim watershed maintenance and management solution. Section 3.9.6.2 recommends coordination with the agricultural community to ensure that farm operations do not increase erosion within the channel or result in blockage of the channel.

Regarding the creation of a task force, a lead agency for Nipomo has not been confirmed. As discussed in Section 2.1.4.1 of the report, the Nipomo Community Services District (NCSO) has authority to provide drainage services and was recommended to serve as the lead agency for the proposed projects. However, the NCSO voiced concern over serving in the lead role and did not provide a formal response regarding their position. Until the issue regarding who will serve in the lead role is resolved, the formation of a task force to work with the County or the apparent lead agency is premature.

- Comment 6:** On page iv, under “Modify Existing Policies ...”, we request that county staff meet with local Nipomo community representatives to consider specific creek and floodplain maintenance and management standards on Delieissihues Creek, between Thompson and the end of Mallagh to maintain or improve floodplain capacity in the area. The standards could include consideration for the best management practices for constructing effective bank resloping, slope stabilization, construction of retention and detention basin, grading and widening of channel courses, etc.
- a. In the stretch between Mallagh and the main stem, annual debris and interfering vegetation removal is recommended.
 - b. The rerouting of the existing channel to remove the “oxbow” turn located near the end of Mallagh, and the re-establishment of the channel between Thompson and Mallagh, and
 - c. Sediment removal, creation of buffers with roads, and stream-bank revegetation. A critical location for this work is just upstream of the High School footbridge.

Response 6: County staff is available to meet with community representatives to discuss the development of floodplain maintenance and management standards for area creeks. It should be noted that the proposed project on Deleissigues Creek discussed in Section 3.8.1 of the report did not include reconfiguration of the channel. Widening and re-aligning the channel will result in an increase in project costs and environmental permitting.

Comment 7: On page v, under: “Increase Retention Basin Capacity Design”, we strongly agree with statement in the last sentence of that paragraph, recommending that the basin volume criteria be revised to include sufficient capacity to store tributary and street runoff.

Response 7: Comment noted.

Comment 8: On page v, under: “Increase Retention Basin Capacity Design”, we request the addition of additional retention basin capacity design criteria that, wherever possible, drainage and retention basins shall be:

- a. Designed for multi-use purposes, as pocket parks for example.
- b. Designed as visually attractive components of private property development.

- c. Designed with gradual sloping sides that encourage multiple uses be the development, when the basin is not needed for control of storm runoff.
- d. Designed with the aesthetic appearance of graded basins in mind, especially for retention basins that would be considered adjacent or abutting Thompson. Motorists that enter Olde Towne will see such basins. Thompson should be designed so that such basins do not appear as ‘eye sores.’

Response 8:

- a. Whenever possible, a single large detention basin that serves multiple residences and also serves as a park is preferred over many single property detention basins. The concept of a large detention basin was implemented in recently completed subdivisions in the Mesa (e.g. on Division near Las Flores). However, for infill development, the only option is to construct individual basins. The County’s handout on basin capacity is intended for individual home owners. An equivalent offsite facility would be applicable if an entire neighborhood mobilized to convert a vacant parcel to serve as a regional detention basin in order to remove individual lot basins.
- b. Many homes have created decorative basins in their front or back lawns (e.g. homes along Las Flores). The aesthetic quality of the basin is left to the discretion of the home owner. It may be possible for the local community to encourage the County’s Planning and Building Department to develop specific guidelines on visual components of the basins.
- c. Multiuse regional basins with gently sloping sides would be preferred. This paragraph in the executive summary and Section 3.9.4 was intended for individual lot basins, and not large regional basins. If regional basins in Olde Towne are implemented, then other uses (such as recreation) can be considered during the design phase.
- d. See response b above.

Comment 9: On page v, under: “Improve Drainage Systems ...”, in the second paragraph starting with the words “It is recommended ...”, provide an explanation as to how development fees would be levied, the mechanism recommended for implementing the development fee program, and how such funds would protected for the exclusive use for the intended drainage improvements. We strongly support this recommendation, but have grave concerns that such funds would not be protected for the intended use and would be used by the county for other programs.

Response 9: The proposed fee would fund drainage improvements that mitigate impacts resulting from increased development. The alternative to paying a fee would be for a proposed development to install the improvements themselves, pending County approval.

Section 5.2.2.5 discusses development impact fees and the government code authorizing the collection of 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 and can be approved by a majority of the Board of Supervisors.

Fees are typically paid when applications are filed with the County's Department of Planning and Building. In this case, the submission of a building or tract map application would be the nexus for collecting development fees to fund drainage improvements. For example, in Cambria, development fees are collected for the Lodge Hill south area to mitigate for erosion impacts associated with increased runoff caused by development. The County would collect a similar fee to fund improvements in Nipomo.

The County would be responsible for ensuring that the collected fees were saved in a capital reserve fund exclusively for the use of drainage improvements in Nipomo.

Comment 10: We recommend that the drainage systems of the Olde Towne study area all be improved to the design standard of a 25-year storm event.

Response 10: Designing and constructing ALL drainage improvements to convey the 25-year storm will result in oversized roadside ditches, curbs, gutters, drop inlets and culverts. The cost to replace all existing minor waterways to conform to a design standard equivalent to a secondary waterway would be cost prohibitive and the financial impacts should be analyzed prior to recommending such a policy. The recommendation to establish a minimum design standard that ALL drainage improvements convey the 25-year storm is not justified due to the additional costs anticipated to conform to this increased level of protection.

Some consideration could be given to establishing a minimum design standard for creek culvert crossings only. All creek culverts or bridges could be designed to pass the 25-year storm with freeboard (unless the creek is a major waterway and designed to convey the 100-year storm). This would impact Hermrick Creek, Tributary 1 and Knotts Street v-ditch, which are considered minor waterways and were designed to convey a 10-year storm with freeboard. This recommendation will increase the project costs outlined in the report, however to a lesser extent than for a more encompassing standard.

If the intent of this recommendation is to prevent flooding from a 100-year storm event, then increasing the minimum design standard to a 25-year storm event will not achieve this objective. Constructing detention basins in the upper watershed or raising homes above the 100-year floodplain are the only options for reducing flood damage potential from a 100-year storm event. The proposed recommendation will reduce the nuisance flooding problems associated with more frequent, less severe events.

Comment 11: On page vi, under: “Maintenance on Existing Facilities”, we agree with the principle of the recommendation that maintenance of drainage channels should be done by the owners of the affected property. However, the county recommendation should offer the knowledge and expertise of its government staff to assist these property owners by:

- a. Providing engineering and planning expertise to streamline permitting, provide instruction, give consultation and on-site guidance, and help coordinate the work by private property owners.
- b. Coordinating, training and cooperating with upstream landowners facilitate maintenance work in streambeds of their upstream properties. The major public safety and public benefit of this practice by the county is to promote best management practices that protect the health, safety and welfare of the Nipomo community that is downstream of that proposed maintenance work. We believe that the maintenance work of upstream property owners in streambeds has the value of a public work, because the downstream residents and landowners directly benefit from their maintenance work.
- c. The county must not abdicate its responsibility to assure appropriate maintenance that reduces liability for damage to downstream property.

Response 11: The County will continue in its current role and be responsible for maintenance of culverts within public right-of-way. It should be reiterated that the NCS D was formed with the powers to construct and improve bridges, culverts, curbs, gutters, and drains (per Government Code Section 61,600) as summarized in Section 2.1.4.1 of the report.

County staff is available to assist the community with programming and planning the proposed maintenance, and providing guidance on managing the creek’s resources to preserve conveyance capacity and improve habitat quality. Due to staff limitations and funding constraints, the County could not serve as the lead agency in securing resource agency permits or scheduling maintenance with various land owners.

If the property owners decided to implement regular maintenance of the creeks, then the County would be willing to provide the leadership and guidance for establishing a long-term creek maintenance program. Section 3.9.5 and 3.9.6 of the report provide more detail on routine maintenance and community supported/managed programs.

Comment 12: On page vi, under: “Community Financial Support”, The discussion of cost/benefit analysis to measure the implementation of projects is troubling because it forces the general community and affected upstream property owners to make decisions that have direct impact on the public good. Without a clear understanding of engineering, environmental, and planning, principles that are necessary for the preservation of public property and for public safety, such decisions, though practical and efficient in cost savings, may have the effect of

endangering public property and public safety. For this reason, the county cannot simply wash its hands and leave the decision to the property owner. The county has a fundamental responsibility to assure its constituents that it provides for public safety and it protects private property from damage within its jurisdiction.

Response 12: The County is not “washing its hands” of the responsibility to implement projects that benefit the community. If a home owner is asked to approve an assessment or property based fee to fund a capital improvement, then the County is responsible for providing the information necessary for a resident to make an informed decision. This disclosure includes the analysis of benefits gained with a particular project versus the cost of said project. This is a quantifiable criteria based on costs and avoided damages.

The criteria regarding public safety, damage to public property and quality of life are qualitative factors that would be considered by a property owner when voting to approve or reject a new tax. All these factors would be presented and discussed with the community during the implementation process.

The County or District will not use its general funding to pay for community specific mitigation improvements. In fact, property owners that benefit from these improvements are expected to pay for the construction and future maintenance of them. 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. Seeking community financial support through an election is not an attempt by the County to avoid responsibility, but the reality of funding public works projects according to state law.

Comment 13: We request that the county work with the local agency, or community organization, chosen as an advocacy organization to prioritize projects and assist in cost analysis.

Response 13: The County is available to assist with the prioritization of projects.

Comment 14: On page vi, under: “Community Financial Support”, The discussion of community financial support has overlooked the reality that the property owners in Olde Towne are people of modest means that can least afford to pay for the cost of repairing the storm drainage system. What have the preparers of this report concluded as to how the community will afford to pay for the repair cost? We recommend adding lower cost recommended solutions, even those that might be accomplished without an assessment.

Response 14: If they qualify, Community Development Block Grants are available to lower income residents to assist in paying the benefit assessment. An analysis on the community’s ability to pay for the proposed assessment was not conducted as part of this study.

The proposed improvements were separated into two categories, the less expensive improvements to bring existing drainage facilities up to current County standards, and the more expensive improvements to build detention basins and provide 100-year level of flood protection. In order to achieve a lower cost, the proposed detention basins should be eliminated from consideration, and only the improvements that bring existing drainage facilities up to current County standards should be considered. The remaining projects should be prioritized and the lower ranking projects would be deferred until a later date. It is unlikely that any of the proposed projects could be implemented without some funding from the local community.

Comment 15: On page i, under Existing Drainage Problems, second paragraph, we wholeheartedly concur in the statement that there is a lack of code enforcement. There is a need for code enforcement of planning and building code violations. Moreover, we are dismayed that the county has not acknowledged this fact as a correctable error and has not recommended action to rectify their own in-house county code enforcement problem. Code enforcement must be an obvious low cost alternative solution that should be included in the consideration of alternatives in the report. We recommend that the county immediately implement code enforcement proceedings that rectify property owner created drainage and flood problems.

Response 15: The County's Department of Public Works and the Department of Planning and Building will meet to discuss policy and enforcement changes to improve drainage and flooding problems.

Comment 16: On page ii, in the Table ES-1, in project 9, where are the drain inlets to be installed?

Response 16: Various community response surveys identified flooding in the area near W. Tefft and Mesa Road. However, the exact location and type of flooding were not listed. The potential area of flooding was difficult to verify, but was assumed to occur in the low lying area on W. Tefft between Mesa Road and Hazel Lane. The proposed drain inlets would be installed on each side of W. Tefft Street near the existing drain inlet.

Comment 17: On page iv, under "Modify Existing Policies and Standards," we strongly agree with the suggestion that a county fee be levied for necessary maintenance and improvement work that must be performed on properties where there has been a failure to properly maintain drainage facilities. We request additional discussion in the report that guarantees that fees will be levied and that the account of collected fees will be dedicated to the use intended for drainage control in the Nipomo drainage and flood area.

Response 17: A new drainage ordinance approved by the Board of Supervisors would be necessary to collect a fee for service. The purpose of the proposed ordinance is not to accumulate an account of supplemental funds for maintenance projects, but to levy a fee for service against those properties that fail to maintain drainage facilities (similar to the basis for establishing fire prevention codes). Item 2 in Section 3.9.2.2 discusses this option in more detail. After sufficient notice to the home owner, the County would have the power to enter a property and complete the maintenance. The County would then charge the owner for the associated fees and refund the account used to carry out the maintenance.

Comment 18: On page v, under “Increase Retention Basin Capacity Design,” in the last sentence, we strongly agree with the recommendation that the basin volume should include capacity to also store contiguous and tributary street runoff. We strongly recommend that basin designs be further required to be built with gradual sloping sidewalls so that they may be useful for multiple purpose human and animal recreational use in their developments.

Response 18: This issue was discussed in Comment/Response 4 and 8 above.

Comment 19: On page v, under “Improve Drainage Systems . . .,” in the second paragraph, how would development fees be preserved and protected for the exclusive use of drainage projects for which they were collected?

Response 19: This issue was discussed in Comment/Response 9 above. Section 5.2.2.5 of the report discusses development impact fees and the government code authorizing the collection of 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 and can be approved by a majority of the Board of Supervisors. Since the fees are tied to a General Plan or a Capital Improvement Program, they are required by government code and the Board of Supervisors adoption of the General Plan to be used for the specific purpose of the fee.

Section 3.7 Olde Towne Engineering Analysis Overview Comments

Comment 1: In Section 3.7.1., Table 3-15, under “Encroachment of Creek and Tributary Channels”, we request the report identify:

- a. Upstream land management practices that may adversely impact downstream watershed flows, especially where such practices may create erosion, runoff problems from impervious surfaces, or downstream channel flow concerns.
- b. Upstream private property owners should be encouraged to learn appropriate land management practices that promote excellent watershed maintenance and management. All improvements within the upstream watershed have the potential to endanger the downstream community. The county has a role to play to encourage the construction of creek and channel improvements that minimize erosion, desilt runoff water content, create buffer zones to separate drainage flows from farm land, and that slow runoff flow. All these

improvements would greatly benefit down stream property and the safety of the community that resides there.

- c. Landowners should be encouraged to join a Nipomo watershed organization and participate in the creation of voluntary best management practices.
- d. A task force should formulate improved guidelines. The Task Force could include community representatives from the agricultural community, urban property owners in the Olde Towne area, as well as the NCAC and Nipomo Watershed Organization. These guidelines would be used for county code enforcement on private property.

Response 1: The comments promote a watershed approach to improving creek conveyance and bank stability. We concur that a watershed approach results in improved creek habitat and fosters better management of creek resources. Engaging the agricultural community to explore methods for reducing impacts (such as sediment deposition or creek erosion) could be one of many “next steps” taken to improving drainage in Olde Towne Nipomo.

- a. Analyzing upstream land management practices that may adversely impact downstream watershed flows was beyond the scope of this study. For Olde Towne, the study focused on the largest problem which was improving existing drainage facilities to meet current minimum County standards. Hypothetical reasons for increased sediment deposition and erosion of a creek’s banks could be included in the report, but without investigating the upstream land management practices, the reasons would be speculative.
- b. The County’s department of Planning and Building could investigate the possibility of passing ordinances that restrict farming operations or development adjacent to a creek’s banks, effectively creating a setback. Section 3.9.6.2 recommends improvements to farming operations that encroach onto creek banks and increase sediment deposition into the channel. Discussion of public education regarding appropriate land management practice which minimize erosion and promote healthy creek geomorphology will be included in the staff discussions regarding revisions to current County ordinances and regulations.
- c. The County is available to work with the local community in addressing best management practices for improving the watershed.
- d. See response to “c”.

Section 3.8.1 Deleissigues Creek Watershed Comments

Comment 1: On page, 3-29, Section 3.8.1.2, “Vegetation and Sediment Management”, we request that the vegetation and management plan area be expanded to include all drainage courses and flood areas that are affected by a 25 year storm event.

- Response 1:** This proposal would only affect Haystack Creek and the two forks. Vegetation and sediment management is a feasible alternative for Haystack Creek and would likely increase the channel’s conveyance capacity. If we assume similar unit costs for the one time vegetative clearing and similar costs for engineering, environmental and administrative tasks, the total project cost for vegetation and sediment management on Haystack Creek is approximately \$452,000.
- Comment 2:** On page, 3-30, Section 3.8.1.2, “Vegetation and Sediment Management”, we strongly disagree with the wording of this section. The majority of the creek watershed is in agricultural land. There are very few trees in the creek. Why has the report recommended tree removal and where is the “overshadowing by a tall canopy” of trees? Where are the trees?
- Response 2:** Reference to tree removal was intended for those trees that currently grow within the creek’s channel. As stated in Section 3.8.1.2, the tree canopy would result from new trees planted outside of the floodway and main flow path.
- Comment 3:** On page, 3-30, Section 3.8.1.2, “Vegetation and Sediment Management”, we believe that the greatest issue requiring correction is not a “shaded riverine aquatic habitat,” but the need to correct the ‘hair-pin turn’ that the creek flow makes at a point shown in Appendix A, Figure 8, on Eve near the location of a note that points to the creek where “vegetal growth and private structures built across creek constrict flow.”
- Response 3:** Deleissigues Creek is considered a secondary waterway and should possess sufficient capacity to convey a 25-year flood event. If the community supported a project that removed homes along Mallagh and Eve Street from the 100-year floodplain, then evaluating alternatives such as realigning the channel should be investigated.

The Federal Emergency Management Agency Flood Insurance Rate Map shows that the 100-year floodplain varies in width from 50 feet to 200 feet wide along the creek centerline. The 100-year floodplain exceeds the creek’s banks near the area bounded by Eve and Day Streets at Mallagh. A detailed 2-dimensional hydraulic analysis would determine the reduction in water surface elevation that could be achieved by straightening the natural meanders in the creek. Experience on similar channel realignment projects indicate that straightening a channel might reduce the water surface elevation by half a foot. The slope and cross sectional area of the channel dictates the capacity of a channel. These improvements would assist in containing the 100-year flood event within the creek’s banks, but until a detailed hydraulic analysis of straightened channel is conducted, quantifying the reduction in the water surface elevation will not be known.

An alternative to modifying the natural meander of the channel would be to build berms setback from the creek bank to contain the 100-year flow. This would

allow for the creek to remain in its current alignment and would also preserve the natural sinuosity of the channel.

Comment 4: On page, 3-30, Section 3.8.1.2, “Vegetation and Sediment Management”, we strongly believe that the upstream location of the creek should have improvements that minimize erosion, desilt runoff water content, create buffer zones to separate drainage flows from farm land, and that slow runoff flow. All these improvements would greatly benefit down stream property and the community that resides there. We are concerned that the statements to remove vegetation do not address the condition of the streambeds. We fear that negative conditions will still remain that may increase the damaging effects of continued erosion and subsequent flooding.

Response 4: This response assumes that the “upstream location” referenced in the comment refers to the reach of creek upstream of Thompson Avenue. The general theme of this and previous comments are geared towards promoting environmental stewardship, restoration and protection of the upper watershed in Olde Towne Nipomo. Watershed planning is a comprehensive and visionary approach to improving creek habitat and maintaining flood conveyance capacity. However, in Olde Towne, so much is needed in terms of raising the minimum drainage standard for existing culverts that improved agricultural practices upstream of Thompson Avenue will not address or improve the recurrent flooding problems caused by moderate storms. That said, if a parallel effort to restore creek habitat is implemented along with drainage improvements, then one could expect cumulative improvements in flood protection.

The improvements proposed in Comment 4 should be categorized as restoration projects. These proposals to minimize erosion and create buffers between agricultural runoff are far beyond best management practices. Improvements that minimize erosion within the creek’s channel include revegetation and establishment of riparian habitat. These improvements could result in a decrease in sediment deposition in the lower reaches within the urban corridors. However, the fact remains that the biggest issue is not erosion and sediment deposition, but a lack of conveyance capacity to contain peak flow discharges.

Comment 5: On page, 3-30, Section 3.8.1.2, “Vegetation and Sediment Management”, we strongly recommend that policy is needed to maintain and improve the flood plain between Thompson and Mallagh, as shown in Appendix A, figure 7. This is primary area for future development.

Response 5: It is unclear which floodplain the comment is referring to. The largest 100-year floodplain is located on Haystack Creek, but the area between Thompson Avenue and Mallagh Street within the Haystack floodplain is developed. If the comment is referring to the undeveloped area north of Eve Street and if the comment is implying that development should not be allowed within the creek’s banks, then we agree with the statement. Section 3.9.2.1 recommends that the County’s

Department of Planning and Building develops a policy that establishes a minimum setback from the top of creek bank to prevent structures from encroaching on a creek.

Comment 6: On page, 3-30, Section 3.8.1.3, “Project Cost Estimate”, we are concerned that the estimate shows vegetation clearance (\$120,000) that does not appear to be needed from our review of field conditions. We request clarification on what that work entails. We are concerned that the cost for repair of the ‘hair-pin turn’ is not included. Please include this vital cost.

Response 6: An assumption was made that the entire creek reach between the confluence with Nipomo Creek and Thompson Avenue would require vegetation and/or sediment removal to restore the creek’s conveyance capacity to a 25-year level of flood protection (secondary waterway criteria). If, after completing a detailed hydraulic design, it is revealed that sediment removal and vegetation management is not required on the entire creek reach, then the cost estimate will be revised. The work would primarily consist of clearing overgrown trees in the channel, removing sediment, and restoring the channel to convey a 25-year flood event with freeboard. The cost estimate did not include realignment of the channel because it is uncertain whether realigning is necessary to convey the 25-year peak discharge. If one of the criteria is to contain the 100-year flood event to the channel, then the future project would investigate realigning the channel.

Section 3.8.2 Tributary 1 Comments

Comment 1: On page 3-31, Section 3.6.2.2 Proposed Project, under “Improve Roadway Crossings ...”, in the second paragraph, the list of culverts and ditches to be cleaned should include the 3’ by 3’ culvert that crosses under Thompson.

Response 1: Field inspections conducted during the study did not indicate an accumulation of sediment within the culvert. The smaller existing culverts crossing under Mallagh Street had an accumulation of sediment and vegetation at the inlet that should be removed.

Comment 2: On page 3-31, under: “Optional Additional Facilities ...”, we strongly request that the detention basin proposed upstream of Thompson be designed as a visually pleasing improvement with gradually sloping side walls, so that this improvement does not detract from its appearance as a “gateway feature” for motorists that enter Olde Towne. Also, consider:

- a. The installation of well maintained check dams upstream in the watershed might be a low cost alternative, with a license agreement arrangement with the landowner.
- b. Utilize the open lot at Thompson, Bee, and Burton, for secondary storm water detaining capacity. We recommend that this property be landscaped with consideration for publicly accessible mixed use options, as a pocket park.
- c. Increase the capacity of channels on the downstream side of Mallagh Road.

- d. Install the storm drain on Burton, near Day, which is planned but not yet installed.

Response 2: If implemented, the final design of the proposed detention basin could include gradually sloping side walls and other features to enhance the appearance of the basin. The basin could also serve as a multi-use facility (such as recreation) when not being used as a detention basin. Multi-use features are proposed in the report, but the details should be developed during the design phase. Note that the configuration of this proposed basin, as well as several others, was revised from that of the draft report to illustrate a more aesthetic appearing facility.

- a. Check dams are generally used in concentrated flow areas, such as vegetated ditches and swales. Check dams are not used in streams or channels for reasons described below. Check dams can either be permanent or temporary barriers that prevent erosion and promote sedimentation by slowing flow velocities and/or filtering concentrated flows.

Check dams tend to pond water. Under low-flow situations, water ponds behind the structure and then seeps slowly through the check dam, infiltrates or evaporates. A check dam will still require sufficient land to pond runoff collected upstream of the dam. Under high-flow situations, water flows over and/or through the structure. Erosion control blankets should be used in conjunction with check dams. Erosion-control blankets are used for establishing and reinforcing vegetation on slopes and ditch bottoms. Since check dams are not built to detain high flows, this alternative would not be a feasible substitute for a detention basin which is designed and built to store the 100-year peak discharge and protect downstream properties.

Check dams provide relatively good removal of coarse and medium size sediment from runoff. However, most fine silt and clay particles will pass over or through the voids on these structures. Check dams are used as permanent erosion-control measures, but not flood protection measures. Check dams are relatively inexpensive, easy to construct, and are effective at reducing erosion and sediment transport off site. Check dams may be more appropriate for agricultural drainage channels that drain runoff from a field to one of the creeks tributary to Nipomo Creek.

- b. The proposed vacant land adjacent to Bee Street, between Thompson and Burton, was considered a potential detention basin site for Hermrick Creek, not for Tributary 1. A basin at this site would not benefit Tributary 1 because local runoff that flows to this area would be conveyed in Hermrick Creek, not Tributary 1. However, since the comment was made, a brief discussion on the feasibility of using this site as a detention basin is provided. The available land is not large enough to attenuate the peak runoff from a 100-year flood event, and adding other multi-use features like a pocket park will reduce the volume available for storage since the basin will need to be terraced to ensure

that the recreational facilities are not inundated during storms. If the proposed detention basin upstream of Thompson Avenue was not available, then this site could be designed to attenuate a peak storm, but the size would not be sufficient to attenuate the 100-year flood event. If the proposed detention basin upstream of Thompson is implemented, then this underutilized lot could serve solely as a park without the need of modifying the surrounding contours to accommodate a detention basin.

- c. Section 3.8.2.2 of the report states that the channel between Deleissigues Creek and Mallagh Street should be cleared of sediment and excess vegetation. Clearing the sediment will increase channel capacity and prevent water from backing up and ponding on Mallagh and Sea Streets.
- d. The study team was not aware that a storm drain is already planned but not yet installed at Burton near Day Street. The comment may be referring to the installation of a 30-inch diameter corrugated plastic pipe (as show in Figure 7 of Appendix A) by a private home builder between Day and Sea Streets. The 30-inch plastic pipe conveys Tributary 1 flows from Thompson Avenue to Burton Street.

If the comment is referring to a new storm drain in Burton that would convey flows from Day to Sea Street, then roadside ditches along Burton Street currently convey road runoff to Sea Street and eventually to Deleissigues Creek. If properly maintained, the existing roadside drainage ditches should possess sufficient capacity to meet the County's current standard for minor waterways (minor waterways have a drainage area of less than one square mile and are designed for an average storm recurrence interval of 10 years with freeboard). Constructing a storm drain in Burton near Day Street would convey storm runoff underground and would also be designed to convey the 10 year storm. A storm drain would require far less maintenance when compared to an open roadside ditch. From a capacity perspective, an underground storm drain and a properly maintained drainage ditch should be equal.

Constructing 500 feet of 30-inch diameter storm drain to replace existing roadside drainage ditches would cost approximately \$90,000. The total project cost (includes engineering, design, administrative, environmental and contingency) is approximately \$162,000. Compared to the cost in Table 3-17 for improving existing roadside drainage ditches and installing culverts at road intersections, installing a new storm drain would nearly double the total project cost and provide minimal benefit to storm runoff conveyance.

Comment 3: We strongly believe that the report has promoted the use of best management practices to solve the flood hazard issues for this tributary. It has not addressed the low area on the south side of Sea Street and an area that floods on Burton Alley, between Sea and Bee Streets. We implore the county to acknowledge the

need to avoid an eyesore for the detention basin at Thompson, as this is a location that forms a gateway to Olde Towne.

Response 3: The low areas were addressed by the proposed sediment removal necessary to clear the pathway for runoff in the roadside ditches along Mallagh Street to flow freely toward Deleissigues Creek. Four low area homes experiencing flooding were identified during the community questionnaire process and evaluated during field review.

Based on field investigations, it appears that at one point Tributary 1 flowed from Burton Street, across Sea Street and through private lots before crossing Mallagh Street and eventually discharging to Deleissigues Creek. The comment referenced Burton Alley between Sea and Bee Street as a location of flooding, but it is unclear exactly where flooding occurs. Review of street drainage patterns indicates that runoff from Burton Street currently flows in roadside drainage ditches in Sea Street to Mallagh Street, and eventually discharges to Deleissigues Creek. The proposed projects to install a 30-inch culvert at the crossings of Burton and Mallagh Streets with Sea Street, and to also clear the roadside ditches of sediment and vegetation should improve drainage and prevent flooding during average rain storms.

The County is aware of the need to design visually appealing storm detention basins. Note that the configuration of regional proposed basins was revised from that of the draft report to illustrate a more aesthetic appearing facility.

Section 3.8.3 Hermrick Creek Comments

Comment 1: Under 3.8.3.2., In the topic of Optional Additional Facilities, on page 3-33, the Fairview basin should be designed with gradual sloping sides and with landscape considerations so as to present an attractive “gateway” feature to motorists who are entering Olde Towne.

Response 1: See Response 2 for Tributary 1 comments.

Comment 2: We recommend that the county actively partner with a task force, or local community organization, to establish priorities for the selection of low cost watershed maintenance and management projects. Such low cost solutions might include:

- a. license agreement, or easement, with upstream landowners to use agricultural land for such improvements as check dams, etc.
- b. explore the feasibility of an open space parcel at Thompson, Bea, and Burton, for secondary detention capacity
- c. annual maintenance to clear vegetated areas
- c. annual culvert cleaning and sediment removal.

Response 2: The County is available to assist the local community and lead agency in developing solutions that will improve watershed management and flood

protection in Olde Towne. The County will continue to maintain existing culverts and drainage structures within the County road right-of way with available manpower and resources.

Comment 3: We believe that ‘check dam’ type improvements upstream in the watershed would be a significant low cost alternative for the management of the watershed.

Response 3: See Response 2a in Tributary 1 comments. Check dams are effective at reducing erosion and sediment transport off site. Preventing erosion and sediment transport should be explored on a parallel track with the implementation of drainage improvements that bring existing facilities up to the current County design standard.

Section 3.8.4 Haystack Creek Comments

Comment 1: We recommend that the county actively partner with a task force, or local community organization, to establish priorities for the selection of low cost watershed maintenance and management projects. Such low cost solutions might include:

- a. license agreement, or easement, with upstream landowners to use agricultural land for such improvements as check dams, etc.
- b. annual maintenance to clear vegetated areas
- c. culvert cleaning and sediment removal, such as at North fork crossing at Tefft Street.
- d. Enforcement of code violations and channel encroachments in urban areas on the North and South forks.
- e. Bank stabilization and culvert improvements to direct and contain flow

Response 1: a and e. The County is available to assist the local community and lead agency in developing solutions that will improve watershed management and flood protection in Olde Towne.

b and c. The County will continue to maintain existing culverts and drainage structures within the County road right-of way with available manpower and resources.

d. The County’s current code enforcement process with regard to creek encroachment should be evaluated by County staff to determine if adequate controls exist to correct reported violations. The creeks in these locations are generally located on private property, and monitoring is extremely difficult. Report Section 3.9.5 recommends the establishment of a drainage facility maintenance department. This issue will be reviewed by County staff relative to recommendations to revise existing drainage policies and regulations.

Comment 2: We believe that ‘check dam’ type improvements upstream in the watershed would be a significant low cost alternative for the management of the watershed.

- Response 2:** See Response 2a in Tributary 1 comments. Check dams are effective at reducing erosion and sediment transport off site. Preventing erosion and sediment transport should be explored on a parallel track with the implementation of drainage improvements that bring existing facilities up to the current County design standard.
- Comment 3:** Include the replacement of the Thompson culvert with an arch culvert, as originally recommended in the study as part of phase II Olde Towne Improvement Plan. Explain why the prior design for an additional culvert at Tefft and Avocado in the technical draft was excluded from this draft.
- Response 3:** Replacement of the existing Haystack Creek culvert at Thompson with an arch culvert is proposed in the report in Section 3.8.4.2. An additional double 6' by 4' culvert to be installed adjacent to the existing culvert on Haystack Creek north fork at the Tefft Street crossing near Avocado is proposed in Section 3.8.4.2 of the final report.
- Comment 4:** In Appendix A, Figure 7, titled “Existing Drainage Facilities,” on the drainage path of Haystack Creek, at the confluence of Haystack Creek South Fork and North Fork and downstream of the confluence, we are concerned the report has not adequately addressed slope stabilization, buffer zones, channel vegetation clearance and other channel protection work necessary to protect adjacent private property.
- Response 4:** The primary issue regarding flood protection on Haystack Creek is the lack of conveyance capacity in the existing culverts. Although not addressed directly for Haystack Creek, the proposed vegetation clearing and sediment removal project for Deleissigues Creek could be applied to Haystack Creek as discussed in Response 1 for the Deleissigues Creek comments. Recommendations discussed in Sections 3.9.5.1 and 3.9.5.2 address creek and culvert maintenance, vegetation removal, bank protection, and trash removal that will improve flood protection for adjacent properties. The creeks in these locations are generally located on private property, with maintenance the responsibility of the property owners. The property owners must be active supportive advocates for any remedial project to be successful.
- Comment 5:** In Appendix A, Figure 7, titled “Existing Drainage Facilities,” along the North Fork of Haystack Creek, we are concerned that the report has not adequately researched and addressed the channel flow characteristics and the flow capacity of the existing open-cut earth channel and the under pavement culvert in Tefft. We strongly support the county’s recommendation to include this drainage and flood control work in the project.
- Response 5:** The study did not collect survey information necessary to quantify the channel capacity of Haystack Creek. If the proposed arch culvert projects proceed to

design, then survey information should be collected to determine the conveyance capacity of Haystack Creek and the two forks.

Section 3.4.1 Mesa Comments

Comment 1: The Committee reviewed the drainage and flooding problems in the Mesa area of the report. In general, our findings were found to be best described along with the other comments already presented regarding the Executive Summary section of the report. The comments included the following general areas:

- a. retention basins need to be designed to include tributary street flow.
- b. roadway drainage needs to be maintained and culverts need to be regularly maintained.
- c. code enforcement is needed to re-establish retention basins and to clarify drainage responsibilities of upstream property owners.

Response 1: Responses to the Executive Summary Comments address these comments, specifically Responses 4, 8, 11, 15, and 18.

General Comments on the Figures appearing in the Appendices

Comment 1: Our field check of the watersheds in the Olde Towne area revealed that the map figures in Appendix A have left out significant channel drainage and flood control issues.

Response 1: More information, specifically location of problems, is needed from the commenter to quantify and discuss the drainage problems purported to have been excluded from the study.

Comment 2: We observed several instances of inaccurate map descriptions. For example, a small sample of what we observed includes:

- a. In Appendix A, Figure 8, along Deleissigues Creek, the map does not accurately depict the “oxbow” turn of the channel at the north end of Mallagh.
- b. In Appendix A, Figure 8, the culvert on Tributary #1 between Thompson and Burton extends further to Burton than is shown.

Response 2: The creek alignments shown in the figures identify the general location of creeks in relation to the reported drainage and flooding problems in Olde Towne. Aerial mapping and topographic surveys were not collected for this project. Therefore, any figure identifying a creek’s alignment should be considered an approximation.

The culvert installed by the home owner on Tributary 1 was corrected in the final report.

EXECUTIVE SUMMARY

This report is a summary of findings, conclusions and recommendations of the Drainage and Flood Control Study conducted for the Community of Nipomo. 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 funding 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. 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 the 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.

Existing Drainage Problems

MESA

The Mesa's flooding and drainage problems reported by residents are primarily due to standing water along County roadways, although some reports of runoff from the roadway on private property were made. **The standing water appears to be the result of the undulating terrain of the Mesa, lack of maintenance of the existing drainage infrastructure, and development grading which blocks previously existing runoff flow paths.** The Mesa's undulating topography creates numerous depressions, including low spots having no outflow drainage paths, which lead to a high incidence of localized ponding.

To prevent the ponding, the current drainage infrastructure is primarily based on individual parcel runoff retention and infiltration, which prevents runoff from leaving each developed site. However, the gradual loss of individual basin retention capacity over time has increased basin overflow frequency and runoff from the individual sites. Current County Drainage Policies and Standards lack sufficient enforcement provisions to

ensure that the drainage and infiltration infrastructure is maintained. In some areas, the regrading of land during development cause previously existing flow paths to become blocked, causing ponding in areas which had previously been drained.

OLDE TOWNE

Much of Olde Towne is located within a 100-year flood hazard zone. These areas have been identified by FEMA as subject to flooding during a 100-year rainfall event. The lower lying areas near the creek and tributary channels may also be subject to flooding from more frequent rainfall events due to inadequate local drainage facilities to convey urban runoff from homes and streets to the creeks.

The major flooding problems in Olde Towne result from flood flows breaking out of one of the five creeks flowing through the urban areas of Olde Towne. A majority of the culvert crossings in Olde Towne do not meet the current minimum County standard. The culverts within Olde Towne are generally not sufficient to pass the 10-year flow rate without surcharge, although some can pass higher return period storms with surcharge. The culverts and crossings along Haystack Creek, with exception of the newly installed arch at the Tefft Street crossing, are generally insufficient to carry the 10-year flow, when the minimum standard requires sufficient capacity to pass the 25-year flow. If the channels and culverts were designed per the County's standards for Major and Secondary waterways, then the threat and frequency of flooding from large storms would be reduced because the facilities would have sufficient capacity to convey the peak storms.

Maintenance of existing drainage structures is lacking in Olde Towne. The creek channels, culvert crossings, and roadside ditches need restorative and periodic annual vegetation management and sediment removal. **Conducting necessary maintenance on creeks in Olde Towne is complicated not only by the regulatory permit approval process, but also by the location of most creeks within private property. The County was not granted a drainage easement on any of the creeks in Olde Towne and therefore can not perform routine maintenance or channel clearing on any reach of creek outside of public right-of-way.**

Proposed Projects

MESA

The most common problem in the Mesa is the collection and ponding of storm runoff along road shoulders. Conceptual projects aimed at reducing standing water impacts were developed for the flooded areas that received the greatest number of public response comments. The reader should note that this problem has resulted from the evolution of the paved road initially constructed, then subsequent development along the paved road restricting and trapping runoff, leading to the current ponding. The proposed projects can also generally be applied to the flooding problems which received fewer complaints. The proposed projects were based on limited field information and elevation data. The proposed projects include raising road grade elevations, installing retention basins, storm drains and drop inlets, and also conducting maintenance on existing facilities to improve flow conveyance. Each proposed project will function independently to solve a local flooding or drainage problem.

The total estimated cost for the 11 proposed projects is approximately \$840,000. Table ES-1 summarizes the proposed projects and also provides estimated costs and implementation timeframes.

Table ES-1: Mesa Summary of Proposed Projects

PROJECT	PROBLEM AREA	PROPOSED MITIGATION	COST ¹	APPROXIMATE IMPLEMENTATION TIME FRAME ²
1	N. Las Flores near W. Tefft	Raise road elevation	\$116,000	3 to 4.5 years
2	Pablo Lane near La Cumbre Lane	Raise road elevation/Install basin	\$147,000	3 to 4.5 years
4	Osage Street near Eucalyptus Road	Raise road elevation/Install basin	\$141,000	3 to 4.5 years
5	Tejas Place near Osage Street	Remove curbside blockage/Install basin	\$44,000	3 to 4.5 years
7	Division Street north of Shiffnar Lane	Install retention basin/storm drain	\$87,000	3 to 4.5 years
9	W. Tefft Street near Mesa Road	Install drain inlets	\$36,000	3 to 4.5 years
10	Division Street near S. Las Flores	Install drop inlet/modify basin	\$44,000	3 to 4.5 years
11	Calle Del Sol and La Cumbre	Overflow pipeline/energy dissipator	\$225,000	3 to 4.5 years

Notes:

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. Typical estimates used for County Overhead & Support Costs for Construction Project Planning. Use 80% cumulative markup on construction costs for Coastal Zone Projects. Percentages provided by County (Typical to all estimates in this report).
2. See Table 6-1 for detailed milestone durations. If a lead agency is in place, then decrease the duration by approximately 9 to 12 months. The length of time will be effected if cultural resources are determined to be present during the CEQA phase.

OLDE TOWNE

The proposed projects for Olde Towne are typically culvert replacement projects to raise the design standard of most street crossings and conform to the County’s current standards for minor, secondary and major waterways. The community can also pursue projects that provide 100-year level of flood protection and could potentially remap the FEMA flood hazard zone, removing homes and businesses from the 100-year floodplain. The proposed Deleissigues Creek vegetative management and sediment removal project, and the proposed detention basins could potentially impact jurisdictional waters and sensitive species habitat. Mitigation would likely be required by the resource agencies to offset any impacts to habitat.

The potential for habitat impacts presents permitting challenges and increases the level of complexity that must be addressed during the environmental documentation and permitting phase, and with the appropriate design features and mitigation, these impacts can be reduced to a less than significant level. Constant communication with the resource agencies during the design and permitting phase will be necessary to ensure that their concerns are addressed and that appropriate features required by the permits are designed into the project.

Just as important as the structural improvements, the community should form a drainage facility maintenance department. Routine maintenance of the roadside drainage ditches and culverts would minimize flooding problems associated with the more frequent moderate storms. The community’s maintenance department would also be responsible for implementing a long-term maintenance program for the creeks to remove sediment, manage vegetation and ensure that the natural resources are protected during routine maintenance.

The community should also implement a community awareness campaign to educate residents living alongside creeks on preserving the creeks' conveyance capacity by not disposing of trash or storing household items in the channel. Informing and educating the community on the benefits of maintaining clean creeks will help Nipomo achieve multiple objectives from flood protection to creek restoration. The educational programs could also assist the community on how to prepare for the rainy season. Much like annual maintenance, awareness and preparedness are on-going activities.

Table ES-2: Olde Towne Summary of Proposed Projects

PROJECT	PROBLEM AREA	PROPOSED MITIGATION	COST ¹	APPROXIMATE IMPLEMENTATION TIME FRAME ²
Deleissigues Creek	Thompson Road to Nipomo Creek	Vegetation maintenance	\$387,000	3 to 4 years
Tributary 1	Near Sea and Mallagh Streets	Install culverts and conduct maintenance to meet County design standards for minor waterways	\$171,000	3 years
Tributary 1	Urban Drainage Area	Install detention basin east of Thompson Road to store runoff greater than a 10-year flood event.	\$253,000	3 to 4 years
Hermrick Creek	Burton and Mallagh Culvert Crossings	Replace existing culverts to increase capacity and meet County design standards for minor waterways	\$108,000	3 years
Hermrick Creek	Urban Drainage Area	Install detention basin east of Thompson Road to store runoff greater than a 10-year flood event.	\$412,000	3 to 4 years
Haystack Creek	Tefft, Thompson and Mallagh Crossings	Install culverts on the North Fork of Haystack Creek at Tefft Street, replace the existing culverts with arch culverts at Thompson and Mallagh. Erosion protection measures at Thompson and Mallagh.	\$1,746,000	3.5 to 4.5 years
Haystack Creek	Urban Drainage Area	Install detention basin east of Thompson Road to store runoff greater than a 25-year flood event.	\$2,267,000	4.5 to 5.5 years
V-Ditch Replacement	Knotts Street	Replace existing v-ditch open channel with an underground storm drain.	\$669,000	3 years

Notes:

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. Typical estimates used for County Overhead & Support Costs for Construction Project Planning. Use 80% cumulative markup on construction costs for Coastal Zone Projects. Percentages provided by County (Typical to all estimates in this report).
2. See Table 6-2 for detailed milestone durations. If a lead agency is in place, then decrease the duration by approximately 9 to 12 months. The length of time will be effected if cultural resources are determined to be present during the CEQA phase.

ADDITIONAL RECOMMENDATIONS

FEMA Community Rating System

Nipomo should participate in the Community Rating System (CRS). The CRS gives credit points for any of several designated activities within four distinct categories (Public Outreach, Mapping and Regulations, Flood Damage Reduction, and Flood Preparedness). As points are accumulated, a community will receive one class reduction starting at class 9 all the way down to class 1. Each class translates to an additional reduction in insurance premiums of five percent for flood insurance policies within the special flood hazard area of that community.

Modify Existing Policies and Standards

Modifications to existing County planning standards and policies are also recommended to reduce the risk of flooding for residences developed in low lying areas, and to provide the County with greater enforcement capabilities regarding maintenance of individual homeowner retention basins. County Drainage Standards and Policies specify the responsibility of onsite runoff management as belonging to residents; however, no specific sanctions and no consistent procedure are available to enforce maintenance of local facilities. A drainage ordinance allowing the County to levy a fee for service against those properties that fail to maintain drainage facilities should be considered. Retention basin inspections and upgrades to meet current drainage standards could also be required during transfer of property ownership to ensure that basin sizes can accommodate runoff generated from impervious area on the lot.

County policies should be updated to provide the Department of Public Works with sole review and approval responsibilities regarding drainage infrastructure for development. Modify existing County standards for undrained depressions to include all of the smaller localized sump areas to reduce structure flooding risk.

Increase Retention Basin Capacity Design

The current sizing requirements of the basins are based on providing adequate volume for 4 inches of rainfall on the impervious area of the property. The sizing of the basins are based on the impervious surface area of the parcel only, however, the basins are often the discharge point of street runoff and overflow from neighboring properties. The County should consider revising the basin volume to include sufficient capacity to store street runoff also.

Elevation Requirements and Mountable Berms

Homes located below street grade and whose driveways slope down away from the road may experience flooding in the garage or home. This is because without an adequate curb/berm, the driveway may act to convey runoff from the street above to lower elevations and sometimes into the garage or home. For homes outside the floodplain, it is recommended that County land development ordinances be revised to mandate that the finish floor and garage elevation for all new home construction be one foot greater than the adjoining street grade, wherever feasible. Driveways should slope down away from the home, towards the road. It is also recommended that these County ordinances mandate the installation of a County standard mountable berm (or acceptable alternative) for all driveways/accesses to structures which are below the edge of pavement.

Improve Drainage Systems as the Community Develops

Drainage improvements should be planned with any proposed development. Regardless of whether drainage problems exist prior to development, mitigation should be planned so 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 future development fees collected for Nipomo be used to fund drainage improvements for areas that will be most impacted by future development. These areas are typically the topographic low points within a drainage sub-basin. If new development can not retain runoff on site, then a means shall be provided for new development to fund compensable improvements to convey and/or store 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.

Form a Drainage Facility Maintenance Department

It is recommended that a facility maintenance district be formed to better maintain the drainage infrastructure in Nipomo. Responsibilities of the new maintenance district would include: (1) being the contact point for all resident complaints regarding drainage infrastructure in the community; (2) keeping an organized database of all new drainage infrastructure in the community including the size and capacity of culverts and storm drains, even if this infrastructure is installed by private property owners; (3) keeping a regular maintenance schedule that may involve multiple maintenance visits where needed; and (4) responding to drainage infrastructure repairs as needed. Having a localized facility maintenance district will make it easier to maintain drainage infrastructure as needed throughout the community.

Maintenance on Existing Facilities

Existing natural or constructed 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 should rest with the owners of the property through which the drainage channels pass since the County is not responsible for maintaining facilities on private property. 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.

Implement Long-Term Creek Maintenance Program

It is necessary to remove sediment and debris from creeks that are deposited after peak flow events. Maintenance crews spend most of the summer and fall months accomplishing this task before the fall rains begin. The major types of routine stream maintenance activities include sediment removal, vegetation management, and bank protection.

Implementation Strategy

The most effective approach for 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. **Since the Nipomo Community Services District has authority to provide drainage services per Resolution 18-65 (see Appendix D for scanned image of resolution), it is recommended that the NCSD assume the role as lead agency for implementing the drainage projects.**

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 Nipomo totaled approximately \$6.9 million. If the lead agency in Nipomo established a funding source, the following approximate annual revenue would have to be generated by the community in order to build all the projects and pay off a municipal bond¹:

- Mesa improvements, \$60,000 per year
- Olde Towne improvements to current County design standard, \$219,000
- Olde Towne storm detention basins, \$208,000

¹ Assumes a municipal bond rate of 5 percent, paid off over a period of 25 years.

Community Financial Support

If the residences benefiting from these projects calculate that their average annual damages due to flooding are less than the assessment or fee necessary to mitigate the flooding, then the community might conclude that risking flood damages is economically beneficial. In other words, the benefits gained are less than the cost of the project. A discussion of flood protection benefits versus project costs should be conducted with the community in order to measure the interest in implementing a project. The discussion would explore whether the community is willing to financially support a project if the costs exceeded the benefits.

IMPLEMENTATION STEPS

It is recommended that the following implementation steps, in general, be followed for the proposed projects.

- Fund and complete a Basis of Design Report² within 9 to 18 months of start (depends on complexity of project. Projects in Olde Towne were more complex from an engineering and environmental perspective.)
- Conduct benefit assessment or property based fee proceedings
- Design project, prepare environmental documents and resource agency permits
- Advertise for construction
- Construct project

The phasing of projects would depend on the residents' desire to implement projects within their neighborhood. The primary difference in the implementation steps for each project involves the complexity and the level of CEQA documentation required for the detention basins, creek maintenance, culvert replacement, and road improvement projects. The majority of projects in the Mesa and Olde Towne qualify for a Negative Declaration or Mitigated Negative Declaration because each has the potential to affect cultural or sensitive resources. However, some projects qualify for Class I Categorical Exemptions because they involve minor alterations to existing public facilities.

SCHEDULE FOR IMPROVEMENTS

Chapter 6, "Implementation Strategy" includes more detail regarding task durations for projects in the Mesa and Olde Towne.

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

Herb Kandel – Nipomo Creek Committee (committee of the Nipomo Community Advisory Council)
Noel King – Public Works Director
Glen Priddy – Deputy Director Engineering Services
George Gibson – Design Engineer Public Works
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San Luis Obispo County
Flood Control and
Water Conservation District



FEBRUARY 2004

**Oceano
Drainage and
Flood Control Study**

FINAL REPORT

RMC

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

In Association with:



EXECUTIVE SUMMARY

This report is a summary of findings, conclusions and recommendations of the Drainage and Flood Control Study conducted for the Community of Oceano. 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 funding to identify water related issues, to determine solutions for these issues 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. 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 the 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.

Existing Drainage Problems

In Oceano, flood control facilities are limited because in its early stages of urbanization, storm water conveyance and flood control infrastructure were not incorporated into the community because the high infiltration rate of the underlying sands was sufficient to naturally dispose of runoff. 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 the area's geology, shallow topography, construction within natural drainage courses without provisions for rerouting surface drainage, and inadequate drainage facilities has resulted in localized poor drainage and/or flooding around some residences, buildings, and roadways. The most serious flooding in the community takes place along Highway 1. Extensive ponding can occur for several days after significant rainfall, causing damage to nearby businesses and creating driving hazards. This problem is generally caused by relatively flat topography and lack of capacity in the drainage facilities to convey runoff south towards the Arroyo Grande Creek Channel. The two main locations of the flooding occur at the intersection of 17th and 19th

Streets with Highway 1 (also known as the Cienaga and Front Street intersection) and the intersection of 13th Street and Paso Robles Street with Highway 1, as shown in Figure 5 of Appendix A.

Proposed Projects

The basic drainage issues in Oceano that need to be addressed include:

- Shallow flooding in residential areas
- Significant frequent flooding at Highway 1
- Management of local storm water runoff when the Arroyo Grande Creek Channel is flowing high

Existing infrastructure, such as the railroad, levees, the airport, and various agricultural operations, have filled in historical drainage paths to the Arroyo Grande Creek Channel. The result is that Highway 1 and the railroad right of way are the lowest points along the blocked drainage courses and are therefore flooded when there is a large storm event. The recommended solution to the problems is the construction of a comprehensive storm drainage system.

Near Term Project

BUILD DOWNSTREAM DETENTION FACILITY

Prior to designing and constructing drainage infrastructure in the community, the underlying problem of how to convey flow into the Arroyo Grande Creek Channel or to a terminal disposal facility must be resolved. Based on the available land, location to the Arroyo Grande Creek Channel, and presence of an existing creek outfall, it is recommended that the County's Airport Enterprise Fund property, currently used as an RV Storage Lot, be further explored as a potential detention facility location. The proposed location is shown in Figure 9 of Appendix A. Constructing a detention facility would be the first step in building a comprehensive and effective community drainage infrastructure project.

The RV storage property is owned by the County's Airport Enterprise Fund, and was acquired with Federal Aviation Administration (FAA) funds. The property was purchased for the primary purpose of providing Runway Protection Zone (RPZ) for the Oceano airport. Allowable land uses within RPZ's are limited and must comply with local, state, and federal airport land use criteria. In addition, because the property was purchased with a FAA grant, the County is obligated, for perpetuity, to comply with grant assurances which include both physical and financial restrictions on the use of the property. The County must obtain FAA approval prior to any change in use of any airport property, including the RV storage property, since this was purchased using FAA funds. Furthermore, approval would be required from Caltrans Division of Aeronautics in order to ensure compliance with State airport permitting regulations.

County General Services staff indicated that there was a potential for use of airport property for drainage and flood control facilities, providing the following could occur:

- The revenue collected for RV storage would need to be replaced since this annual revenue collection is used to operate the airport.
- The proposed drainage basin would need to show a benefit to the airport in order to encourage FAA approval in change of land use.
- The potential conflict between waterfowl and aircraft would have to be addressed. FAA provides guidelines for mitigating against an attractive nuisance such as detention basins.

The County's General Services Department is in the process of initiating a Master Plan update for the Oceano Airport, and will subsequently prepare an environmental impact report (EIR) and Nation Environmental Policy Act (NEPA) document. The Master Plan update could potentially include drainage features that benefit the

airport and the community. Also, the Master Plan could possibly include the evaluation of wildlife attractants in more detail than is required for this drainage study.

CONSTRUCT HIGHWAY 1 AND CHANNEL IMPROVEMENTS

The proposed Highway 1 improvements could then be constructed since a terminal facility would be in place to manage the additional runoff resulting from the installation of curbs and gutters east of Highway 1. Highway 1 improvements assume that ultimately, curbs and gutters would be built in the entire community, increasing runoff above what is currently experienced at Highway 1. Mitigating the flooding near Paso Robles Street and Highway 1 can be achieved by constructing a diversion pipeline adjacent to Highway 1 to divert runoff to the existing 42-inch railroad culvert near Front Street. The existing drainage channels would also need to be improved and the culverts on Creek Road would need to be replaced. These proposed improvements are shown in Figure 9 of Appendix A.

Long Term Project

STORM DRAIN, CURB AND GUTTER SYSTEM

The final component of a comprehensive storm drainage and flood control project would be the mitigation of flooding problems in the residential neighborhoods of Oceano. It is proposed that a continuous curb and gutter system, along with a storm drain collection system be constructed. For those streets located in low points with no outlet, a subsurface infiltration chamber system could provide the necessary infrastructure to dispose of storm water from limited watershed areas. Due to the necessary phasing of improvements from the lower elevations to the higher elevations, these alternatives would be the last implemented. However, once in place, a series of curbs, gutters, storm drains, culverts, and detention basin would collect and convey storm runoff from the residential neighborhoods of Oceano to a terminal detention facility west of Highway 1, and eventually discharge to the Arroyo Grande Creek Channel or percolate into the groundwater.

These projects are recommended for mitigating flooding in the residential neighborhoods, preventing flooding of Highway 1, 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 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 of additional flood protection. The cost estimates for the four alternatives are summarized in Table ES-1.

Additional Recommendations

FEMA COMMUNITY RATING SYSTEM

Oceano should participate in the Community Rating System (CRS). The CRS gives credit points for any of several designated activities within four distinct categories (Public Outreach, Mapping and Regulations, Flood Damage Reduction, and Flood Preparedness). As points are accumulated, a community will receive one class reduction starting at class 9 all the way down to class 1. Each class translates to an additional reduction in insurance premiums of five percent for flood insurance policies within the special flood hazard area of that community.

NEW DEVELOPMENT INVESTIGATE DRAINAGE FLOW PATTERN

The County's Department of Planning and Building should require that all proposed developments that generate off-site runoff should investigate the drainage flow pattern from the lot to the discharge point. The conveyance path investigation requirement can be placed in the building or the grading permit. If the investigation

concludes that the proposed development is contributing to an existing problem, then on-site mitigation with a detention basin or equivalent facility should be required.

Table ES-1: Summary of Alternatives

PROJECT	LOCATION	PROBLEM AREA	PROPOSED MITIGATION	COST ¹	APPROXIMATE IMPLEMENTATION TIME FRAME ²
Detention Facility	County's Airport Enterprise Fund	Drainage to Arroyo Grande Creek Channel	Construct detention facility to serve as terminal disposal facility	\$1,753,000 ³	4 to 5 years
Highway 1 Improvements	Highway 1	Flooding of Highway 1	Construct a diversion pipeline and improve existing drainage infrastructure	\$1,820,000	5 to 6 years
Curb/Gutter and Storm Sewer	Zone F ⁴	Zone F Residential Flooding	Construct complete storm sewer, curb and gutter system	\$1,792,000	4 years
Curb/Gutter and Storm Sewer	Zone G	Zone G Residential Flooding	Construct complete storm sewer, curb and gutter system	\$5,312,000	4 years
Infiltration Chambers	Zone F/G	Various Streets	Construct infiltration chambers in low lying streets with no drainage outlet	\$1,303,000	As implemented by property owners

1. ENR CCI for Los Angeles (February 2003) = 7,566. Includes 20% for Engineering and Design, 60% for Administrative and Environmental, and a 20% Contingency. Typical estimates used for County Overhead & Support Costs for Construction Project Planning. Use 100% cumulative markup on construction costs for Coastal Zone Projects. Percentages provided by County (Typical to all estimates in this report).

2. See Tables 6-2 and 6-4 for detailed milestone durations.

3. Includes present worth cost of lost annual revenue from RV storage facility and lost revenue from possible land sale.

4. Zones F and G improvements are shown in Figure 10 of Appendix A.

DEFER CURB AND GUTTER INSTALLATION REQUIREMENT

County land use ordinance 22.106.070.A.2 requires curb, gutter and sidewalk installation with any project in the Oceano urban area, however, the installation of these facilities has historically and will likely continue to cause isolated flooding problems. In the long term, a complete 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 Oceano has lead to the concentration of street runoff onto areas that do not have curbs or gutters and generally represent local low spots within a neighborhood block. The County's Planning Department should evaluate new construction and remodels on a case-by-case basis. If a new curb and gutter system might concentrate runoff onto a low lying property, then the requirement should be waived and a fee collected for future installation of curb and gutters.

ESTABLISH MAINTENANCE DISTRICT

It is evident that many of the drainage/flooding problems in Oceano are exacerbated by inadequate maintenance of drainage facilities. Currently, the maintenance of drainage infrastructure located within public right of way for unincorporated communities in the County, including Oceano, is the responsibility of the County Public Works Department. It is recommended that a facility maintenance district be formed to better maintain the drainage infrastructure in Oceano. Responsibilities of the new maintenance district would include: (1) being the contact point for all resident complaints regarding drainage infrastructure in the community; (2) keeping an organized database of all new drainage infrastructure in the community including the size and capacity of culverts and storm drains, even if this infrastructure is installed by private property owners; (3) keeping a regular maintenance schedule that may involve multiple maintenance visits where needed; and (4) responding to drainage infrastructure repairs as needed. Having a localized facility maintenance district will make it easier to maintain drainage infrastructure as needed throughout the community.

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 recommended projects for Oceano totaled approximately \$12.0 million. If the lead agency in Oceano established a funding source, approximately \$850,000 per year would have to be generated by the community in order to build all the projects and pay off a municipal bond¹.

It is recommended that the OCSD serve as the lead agency and manage proposed projects, since the OCSD has drainage maintenance authority per LAFCo Resolution 80-6. The District could provide limited staff assistance to the lead agency in implementing the drainage facility projects. However, the OCSD has expressed little interest in serving as the lead agency.

Comments received during the information collection phase of this project illustrated that the OCSD will not participate in a lead role, but would observe and comment on proposed improvements. Another (existing or newly formed) group needs to assume the role of lead agency, or the OCSD should amend their position to initiate implementation. Otherwise, the recommended projects will not be implemented and the problems identified in this report will continue. Home owners must also be willing to fund a significant portion of the required capital costs. The potential for supplemental grant funding could reduce the financial burden on home owners, but grant funding is not guaranteed.

IMPLEMENTATION STEPS

It is recommended that the following implementation steps, in general, be followed for the detention basin, Highway 1 and drainage channel improvements. It is assumed that a community supported agency/zone would serve as the lead agency and assume control of the project at completion.

- Fund and complete a Basis of Design Report² within 12 months of start (12 months for storm drain, curb and gutter system)
- Initiate coordination with Caltrans regarding a cooperative agreement for Highway 1 improvements, and with the County's General Services Department regarding use of County/Airport property as a detention basin
- Conduct a benefit assessment proceeding for the properties that benefit from the improvements
- Design project, prepare environmental documents and resource agency permits
- Apply for CDBG funds
- Advertise for construction
- Construct project

Construction of a drainage system (storm drain, curb and gutter) for Zone F and G follows a similar sequence of tasks. The major and, from a funding perspective, the most fundamental difference is that a curb and gutter project will only benefit those properties on streets receiving the improvement. The property owners will be expected to approve an assessment or property based fee to fund the project.

¹ Assumes a municipal bond rate of 5 percent, paid off over a period of 25 years.

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.

SCHEDULE FOR IMPROVEMENTS

The estimated duration for conducting the tasks outlined in the implementation steps could last approximately four to five years. The duration includes time for identifying a lead agency and developing community support. Chapter 6, “Implementation Strategy” includes more detail regarding task durations.

ACKNOWLEDGEMENT

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

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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

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 led 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: 11 th to 16 th 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
16 th Street	Between Mission Street and railroad: 16 th 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
11 th Street	West of Mission and South of 11 th 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
12 th Street	East of N Street along 12 th 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 bond¹.

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 Report² 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.

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San Luis Obispo County
Flood Control and
Water Conservation District



FEBRUARY 2004

Santa Margarita Drainage and Flood Control Study

FINAL REPORT

RMC

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

in Association with:



EXECUTIVE SUMMARY

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Overview of Responsibility

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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.

Existing Drainage Problems

Flooding problems in Santa Margarita are caused by a number of items. Inadequate channel and bridge capacities, lost and restricted floodplain area due to development, lack of flood protected homes, inadequate or non-existent local drainage facilities, and high peak runoff all contribute to the areas high occurrence of flooding. There are two categories of flooding problems in Santa Margarita: 1) major creek flooding and 2) localized street and property flooding. The major flooding problems in Santa Margarita are caused by a combination of inadequate culverts and bridges, and inadequate channel capacity in Yerba Buena Creek. When the creek's flow exceeds the capacity of the channel and bridge/culvert crossings, water overtops the banks and floods adjacent low topographic areas of Santa Margarita.

The second category of flooding, localized street and nuisance flooding, is caused by the lack of sufficient capacity in the local drainage ditches, driveway culverts, and storm drains. These facilities are often under maintained and filled with sediment or other debris. These factors prevent the local drainage system from adequately conveying urban runoff to Yerba Buena and Santa Margarita Creeks. The lack of gutters and underground storm drains, undersized and under maintained drainage facilities, and location of homes below the

street grade have resulted in localized poor drainage and/or flooding around some residences, buildings, and roadways.

Proposed Projects

The proposed solution to the drainage and flooding problems in Santa Margarita is to develop a regional project that reduces the peak flow in Yerba Buena Creek, and also to improve the localized drainage facilities within the community. Along with the structural improvements, routine vegetative maintenance and sediment removal should be conducted in the creek to maintain the capacity of the channel. The recommended projects include:

- Project 3: Two off-channel detention basins in parallel
- Project 5: Vegetation management
- Project 6: Levee along south side of town
- Project 7: Storm drain diversion to north of town
- Project 8: Improvements to existing drainage system

Four alternative projects were analyzed to reduce the regional flooding caused by flood flows overtopping the creek's banks. Of these four alternative projects, Project 3 provides the greatest reduction in peak flow and improves the level of protection within Santa Margarita from less than a 10-year flood to a 25-year flood level. Project 3 consists of two detention basins that temporarily store water and discharge runoff back into the creek after flood flows have receded. It should be noted that this project does not meet the current County design standard requiring a watershed of this size to pass 100-year storm flows with freeboard (design standards based on watershed size are discussed in Section 3.3.5).

Projects 3 could potentially impact jurisdictional water and sensitive species habitat. However, the disturbance to the creek and riparian habitat would be limited to the areas where the lateral weirs and outfalls are located. The area of disturbance would be minimal, but the resource agencies will likely require mitigation to offset any loss of riparian habitat caused by the installation of an overflow weir and outfall. The other major issue with the lateral weir operation is the potential for fish to become stranded in the detention basin if they are caught in the overflow. Design features on the lateral weir will likely be required to eliminate or limit the potential for fish stranding in the detention basins. The resource agencies may also decrease the frequency in which the lateral weir operates. Instead of diverting flows greater than the 2-year event, the weir may be designed to only divert flows greater than a 10-year event. The loss of habitat and potential impact to fisheries present permitting challenges and increase the level of complexity that must be addressed during the environmental documentation and permitting phase, and with the appropriate design features, these impacts can be reduced to a less than significant level. Constant communication with the resource agencies during the design and permitting phase will be necessary to ensure that their concerns are addressed and that appropriate features required by the permits are designed into the project.

Project 5, vegetation management, should be included with any project that is implemented. In addition to insufficient capacity of the channel and bridge crossings, potential for flooding is intensified by willow and brush growth which has nearly clogged some of the crossings. Regular maintenance is needed to maintain maximum capacity of the channel. If uncontrolled vegetal growth continues, then the community can expect more frequent flooding during moderate storm events.

Local drainage problems and nuisance flooding will continue if the existing drainage system is not improved to meet current minimum County standards. Projects 6, 7 and 8 could all be implemented to improve local drainage. Project 6 includes the construction of an earth levee along the southern lot boundaries on K Street. The south side levee will protect homes from overland flow that breaks out of Yerba Buena Creek in the Miller Flat area. The levee would extend from Maria Avenue to Margarita Avenue and would divert flow along an overland flow path into Yerba Buena Creek.

An improved conveyance system is also needed to positively convey stormwater from residential areas to the creek. Project 7 utilizes the levee and ditch system developed in Project 6, but instead of discharging the flow into Yerba Buena Creek, a new 42-inch underground storm drain would be constructed, starting at the discharge point of the levee drainage ditch. The storm drain alignment would begin in Margarita Avenue and eventually discharge to Yerba Buena Creek at H Street. The proposed storm drain collects local runoff generated from streets and homes, and bypasses the undersized culverts at I Street and Highway 58.

To reduce localized flooding and properly convey stormwater runoff to the creeks, the County's Department of Public Works should work with CSA 23 to develop a standard drainage ditch and culvert design that meets County standards for minor waterways (designed for an average recurrence interval of 10-years). The community should then implement Project 8. Project 8 includes improvements to existing roadside ditches and driveway culverts. Without adopted standards for and community wide installation of improved drainage facilities, local flooding will not be significantly reduced.

The total for the five recommended projects (Projects 3, 5, 6, 7 and 8) described above is approximately \$6.2 million. **Drainage improvements proposed as part of the Santa Margarita Enhancement Plan (i.e. those on Highway 58 in the Caltrans right-of-way not otherwise detailed) are not included in this report or cost estimates.** The CSA 23 Advisory Group provided verbal comments to the project team during the Engineering Technical Memorandum review process. The advisory group indicated support for only two of the proposed projects; Project 5 Vegetative Management, and Project 6 South Side Levee.

Table ES-1 summarizes the proposed alternatives and also provides estimated costs and implementation timeframe. The reader should note that Projects 1 through 4 mitigate against regional flooding and prevent overtopping of the creek's banks. Projects 1 through 3 are similar alternatives solving the same problem, they are not cumulative projects. Projects 5 through 8 increase creek conveyance or improve local drainage.

Table ES-1: Summary of Alternatives

PROJECT	PROBLEM AREA	PROPOSED MITIGATION	COST ¹	APPROXIMATE IMPLEMENTATION TIME FRAME ³
1	Yerba Buena Creek	Detention basin with western bypass	\$2,645,000 ²	4.5 to 6 years
2	Yerba Buena Creek	Single off-channel detention basin with diversion facility and outflow structure	\$2,139,000 ²	4.5 to 6 years
3	Yerba Buena Creek	Dual off-channel detention basins with diversion facility and outflow structure	\$2,015,000 ^{2,4}	4.5 to 6 years
4	Yerba Buena Creek	Channel widening with bridge replacement	\$9,369,000 ²	4.5 to 6 years
5	Yerba Buena Creek	Vegetation maintenance	\$432,000 ⁴	4 years
6	Local	South side levee	\$231,000 ⁴	4 years
7	Local	Storm drain	\$2,724,000 ⁴	4 years
8	Local	Drainage ditch and culvert improvements	\$771,000 ⁴	3 years

Notes:

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. Typical estimates used for County Overhead & Support Costs for Construction Project Planning. Use 80% cumulative markup on construction costs for Coastal Zone Projects. Percentages provided by County (Typical to all estimates in this report).

2: Does not include land acquisition costs.

3: See Table 6-1 and 6-3 for detailed milestone durations. If a lead agency is in place, then decrease the duration by approximately 9 to 12 months.

4: The recommended projects include Projects 3, 5, 6, 7 and 8.

SANTA MARGARITA RANCH INVOLVEMENT

The Santa Margarita Ranch (the Ranch) property is critical to mitigation of the regional flooding problems and the development of a regional solution. Proposed projects rely on the acquisition of property or drainage easements from the owner of the Ranch, therefore their cooperation is imperative to the success of these projects. In addition to property for a detention basin, land will likely be necessary for environmental mitigation to offset project impacts to wetlands and riparian habitat.

ADDITIONAL RECOMMENDATIONS

FEMA Community Rating System

Santa Margarita should participate in the Community Rating System (CRS). The CRS gives credit points for any of several designated activities within four distinct categories (Public Outreach, Mapping and Regulations, Flood Damage Reduction, and Flood Preparedness). As points are accumulated, a community will receive one class reduction starting at class 9 all the way down to class 1. Each class translates to an additional reduction in insurance premiums of five percent for flood insurance policies within the special flood hazard area of that community.

New Development Investigate Drainage Flow Pattern

The County's Department of Planning and Building should require that all proposed developments that contribute runoff to Yerba Buena Creek investigate the drainage flow pattern from the lot to the discharge point

at the creek. If the investigation concludes that the proposed development is contributing to an existing problem, then on-site mitigation with a detention basin or equivalent facility should be required.

Develop Enforceable Drainage Standards

In order to reduce localized flooding and properly convey stormwater runoff from streets and homes to the creeks, the County's Department of Public Works should work with CSA 23 to develop a standard drainage ditch and culvert design that meets County standards for minor waterways (designed for an average recurrence interval of 10-years). The County's Department of Planning and Building can also work with CSA 23 to develop enforceable standards for the following:

- Front yard ditch size and configuration
- Driveway culvert minimum size and installation standards
- Community supported alternative for mountable asphalt dikes
- Community supported drainage plan for the downtown commercial area to be implemented with the Santa Margarita Enhancement Plan

Elevation Requirements and Mountable Berms

Homes located below street grade and whose driveways slope down away from the road may experience flooding in the garage or home. This is because without an adequate curb/berm, the driveway may act to convey runoff from the street above to lower elevations and sometimes into the garage or home. For homes outside the floodplain, it is recommended that Santa Margarita and the County Planning Department mandate that the finish and garage elevation for all new home construction be one foot greater than the adjoining street grade. Driveways should slope down away from the home, towards the road. It is also recommended that Santa Margarita mandate the installation of a County standard mountable berm (or acceptable alternative) for all driveways/accesses to structures which are below the edge of pavement.

Minimize Storm Runoff from Homes

By diverting stormwater from impervious areas such as roofs, walkways and driveways, and reusing whenever possible, runoff that flows to streets can be greatly reduced. This can be achieved by directing rain gutter downspouts to landscaped areas, swales or infiltration basins on private property where water can percolate into the ground. *The reader should recognize that these homes are connected to septic tanks for wastewater disposal and have limited available land. There are some physical limitations which preclude applying the recommendations presented in this report to every lot in Santa Margarita. The potential impacts to a septic system should be evaluated prior to implementing these suggestions.*

Improve Drainage Systems as the Community Develops

Drainage improvements should be planned with any proposed development. Regardless of whether drainage problems exist prior to development, mitigation should be planned so 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 Santa Margarita be used to fund drainage improvements for areas that will be most impacted by future development. These areas are typically the topographic low points within a drainage sub-basin. 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.

Maintenance on Existing Facilities

Existing natural or constructed 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 should rest with the owners of the property through which the drainage channels pass since the County is not responsible for maintaining facilities on private property. If the drainage channels pass through public property, such as County roads, then the County's maintenance department is responsible for removing impediments. The District should continue to provide leadership, advice and encouragement to property owners and local agencies to assume these responsibilities.

Formation of a Drainage Facility Maintenance Department

It is recommended that a facility maintenance district be formed to better maintain the drainage infrastructure in Santa Margarita. Responsibilities of the new maintenance district would include: (1) being the contact point for all resident complaints regarding drainage infrastructure in the community; (2) keeping an organized database of all new drainage infrastructure in the community including the size and capacity of culverts and storm drains, even if this infrastructure is installed by private property owners; (3) keeping a regular maintenance schedule that may involve multiple maintenance visits where needed; and (4) responding to drainage infrastructure repairs as needed. Having a localized facility maintenance district will make it easier to maintain drainage infrastructure as needed throughout the community.

Implementation Strategy

The most effective approach for 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 Santa Margarita totaled approximately \$6.2 million. If the lead agency in Santa Margarita established a funding source, approximately \$440,000 per year would have to be generated by the community in order to build all the projects and pay off a municipal bond¹.

Community Financial Support

If the residences benefiting from these projects calculate that their average annual damages due to flooding are less than the assessment or fee necessary to mitigate the flooding, then the community might conclude that risking flood damages is economically beneficial. In other words, the benefits gained are less than the cost of the project. A discussion of flood protection benefits versus project costs should be conducted with the community in order to measure the interest in implementing a project. The discussion would explore whether the community is willing to financially support a project if the costs exceeded the benefits.

¹ Assumes a municipal bond rate of 5 percent, paid off over a period of 25 years.

IMPLEMENTATION STEPS

Project 3: Off-Channel Detention Basins in Parallel (Request Corps Involvement)

The regional solution for increasing the level of protection in Santa Margarita includes the construction of two off-channel detention basins. The U.S. Army Corps of Engineers (Corps) is available to assist local communities with solving and funding flood protection projects. Through the Corps' Flood Hazard Mitigation and Riverine Ecosystem Restoration Program or Section 205 of the Continuing Authorities Program, the Corps is authorized to assist local communities, such as Santa Margarita, with planning, designing and constructing a flood protection project.

CSA 23 with assistance from the District, should request that the Corps conduct a reconnaissance analysis of the Yerba Buena Creek flooding to determine if Federal interest exists in mitigating the community's flooding problem. The reconnaissance phase is the first step in the Corps' project development process. The reconnaissance phase is paid for by the Corps and no sponsor (CSA 23 or District) funds are required. The primary purpose of the reconnaissance phase is to determine if there is Federal interest in proceeding with the second, or feasibility phase. If the Corps determines that the economic benefits to solving the flooding problem warrants Federal involvement, then the community will be expected to sign a Feasibility Cost Sharing Agreement (FCSA) and send a letter to the Corps attesting to the local sponsor's ability to financially support a portion of the study costs. As explained in the local funding section, an established local funding source will help the community leverage outside funding. The reconnaissance phase typically requires 12 months to complete.

If the Corps' reconnaissance analysis determines that there is no Federal interest in the project, then CSA 23 would need to implement the project. The following implementation steps, in general, should be followed for a selected project(s). It is assumed that CSA 23 will serve as the lead agency and assume control of the project at completion.

- Fund and complete a Basis of Design Report² within 12 to 18 months of start (depends on complexity of project)
- Conduct benefit assessment or property based fee proceedings
- Design project, prepare environmental documents and resource agency permits
- Advertise for construction
- Construct project

The phasing of projects would depend on the residents' desire to implement projects within their neighborhood. At a minimum Project 5, Yerba Buena Creek Vegetation Management, should be implemented to improve and maintain the conveyance capacity of the channel. The primary difference in the implementation steps for each project involves the complexity and the level of CEQA documentation required for the detention basins, creek maintenance and storm drain project. The majority of projects qualify for a Negative Declaration or Mitigated Negative Declaration because each has the potential to affect sensitive resources. The drainage and culvert improvements should qualify for a categorical exemption, but if a new outfall is constructed on Yerba Buena Creek, then a Negative Declaration or Mitigated Negative Declaration may be required. Any work within a creek bank will require environmental permitting through the resource agencies, as detailed in Chapter 4 of this report.

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.

SCHEDULE FOR IMPROVEMENTS

The average duration for a storm drain project is approximately four to six years, depending on the level of CEQA documentation, permitting requirements and environmental mitigation requirements. Chapter 6, “Implementation Strategy” includes more detail regarding task durations.

ACKNOWLEDGEMENT

The San Luis Obispo County Flood Control and Water Conservation District, Community of Santa Margarita Drainage and Flood Control Study 2003 represents a collaborative effort between San Luis Obispo County, the Community of Santa Margarita, Raines, Melton & Carella, Inc., Questa Engineering Corporation and Essex Environmental. We would like to acknowledge and thank the following key personnel from the County, the Santa Margarita County Service Area 23 (CSA 23), and the Drainage Mitigation Committee of CSA 23 whose invaluable knowledge, experience, and contributions were instrumental in the preparation of this report.

Gilbert Cabrera – Current Chairman of the Santa Margarita County Service Area 23 Advisory Group
Tom Becker – Council Member Santa Margarita County Service Area 23 Advisory Group
Carol Whitacker - Council Member Santa Margarita County Service Area 23 Advisory Group
Dave McCoy - Council Member Santa Margarita County Service Area 23 Advisory Group
Heidi Peterson - Council Member Santa Margarita County Service Area 23 Advisory Group
David Reichard - Council Member Santa Margarita County Service Area 23 Advisory Group
John Wilkens – Former Council Member Santa Margarita County Service Area 23 Advisory Group
Melody Kreimes – Former Council Member Santa Margarita County Service Area 23 Advisory Group
Jim Ahern – Former Council Member Santa Margarita County Service Area 23 Advisory Group
Noel King – Public Works Director
Glen Priddy – Deputy Director Engineering Services
George Gibson – Design Engineer Public Works
Dean Benedix – Project Manager Public Works
Paavo Ogren – Deputy Public Works Director

APPENDIX C

Process for Implementing a Flood Control Project

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Process for Implementing a Flood Control Project

The following steps must be followed in implementing a Flood Control Project:

1. **The project must be defined.** This requires that an engineering feasibility analysis be performed. The situation that needs to be corrected must be defined, alternate solutions must be investigated, and options must be analyzed to determine the most feasible way to proceed in terms of engineering, financial and environmental considerations.
2. **Formal project cost estimates must be made.**
3. **A funding source must be identified, then obtained.** As noted earlier, the Flood Control Act contemplates establishing Zones that cover the area benefitted by the project that can then pay for the cost of the improvements. The process that is set up in the Act is for the Zones to pay through property taxes. With the more recent changes to the laws governing taxing, these funding sources require voter approval, and may be required to pass by a two thirds majority.
4. **The project must be designed and constructed.** Once the projects are defined and a funding source is established, the project must be designed, environmental procedures must be followed and the project can then be constructed and operated. In most new projects, the environmental issues must be identified at the beginning of the process and kept in mind throughout implementation so that permits can be obtained.

Environmental Permit Process

All projects, whether they are constructed by a public agency or by private parties are required by Federal, State and local law to comply with environmental regulations. The regulations that most often effect flood protection projects are general environmental protection, protection of endangered species, protection of water quality, and protection of coastal resources.

The following table briefly describes some of the permits that must be acquired to do work within or near a stream channel, whether the work is being done by the County Flood Control District or by a rancher protecting his rangeland:

If the project...	Then a permit or approval is necessary from...
Qualifies as a project under the California Environmental Quality Act (CEQA)	San Luis Obispo County Department of Planning and Building, Environmental Division
Qualifies as a project under the National Environmental Policy Act (NEPA)	San Luis Obispo County Department of Planning and Building, Environmental Division
Disturbs the bed or bank of a stream	California Department of Fish and Game
Involves work below the ordinary high water mark of a stream	U.S. Army Corps of Engineers
Involves disturbance of wetlands or other "waters of the U.S."	U.S. Army Corps of Engineers
Requires a permit from the U.S. Army Corps of Engineers under the Clean Water Act	State Regional Water Quality Control Board
Has the potential to impact sensitive species, marine mammals, migratory birds, or their habitat	California Department of Fish and Game, National Marine Fisheries Service, and/or U.S. Fish and Wildlife Service
Located in the Coastal Zone or in streams that feed into the Coastal Zone	California Coastal Commission and/or San Luis Obispo County Department of Planning and Building, Environmental Division

A list of key dates and changes in the permit process is included as **Appendix E** of this report.

Arroyo Grande Creek Flood Control Channel Long Term Maintenance Project

KEY DATES & CHANGES IN THE PERMIT PROCESS

page 1

Key Permitting Statutes

- 1890 Federal Rivers and Harbors Act. Regulates dredging and filling in navigable waterways
- 1969 National Environmental Policy Act (NEPA). Requires all federal agencies to prepare environmental analyses and document the environmental effects of their projects and activities.
- 1970 California Environmental Quality Act (CEQA). Requires all state and local agencies in California to prepare environmental analyses, document the environmental effects of their projects and activities, and reduce the impacts of their projects and activities to the greatest extent feasible.
- 1972 Proposition 20/Coastal Conservation Initiative. Establishes the California Coastal Zone and the Coastal Commission
- 1972 Amendments to the Federal Water Pollution Control Act (Section 404). Directs the U.S. Army Corps of Engineers to regulate the dredging and filling of "Waters of the U.S."
- 1973 Federal Endangered Species Act. Establishes a listing process for endangered plants and animals and gives the protection and recovery of endangered species the highest priority.

Key Changes in the Permit Process

- May 1996 California red-legged frog listed a federal threatened species
- August 1997 Steelhead trout listed a federal threatened species (endangered in Santa Maria River watershed south)
- May 1999 California Department of Fish & Game required to comply with the California Environmental Quality Act for Streambed Alteration Agreements (Permits)
- June 2000 Substantial revisions in the U.S. Army Corps of Engineer's Nationwide Permit Process
- June 2000 Regional Water Quality Control Board no longer issues waivers for 401 consistency determinations
- March 2000 Steelhead critical habitat designated
- March 2001 Red-legged frog critical habitat designated

What steps are involved in an Endangered Species consultation?

1. The Lead Federal agency contacts the appropriate local U.S. Fish and Wildlife Service office to determine if listed species are present within the action area. The Service responds to the request by providing a list of species that are known to occur or may occur in the vicinity; if the Service provides a negative response, no further consultation is required unless the scope or nature of the project is altered or new information indicates that listed species may be affected.
2. If listed species are present, the Lead Federal agency must determine if the action may affect them. A may affect determination includes those actions that are not likely to adversely affect as well as likely to adversely affect listed species. If the Federal agency determines that the action is not likely to adversely affect listed species (e.g., the effects are beneficial, insignificant, or discountable), and the Service agrees with that determination, the Service provides concurrence in writing and no further consultation is required.
3. If the Lead Federal agency determines that the action is likely to adversely affect listed species, then it must request initiation of formal consultation. This request is made in writing to the Services, and includes a complete initiation package. Up to that point, interactions have been conducted under informal consultation; however, once a request for formal consultation is received, the process becomes formal, and specific timeframes come into play. Formal consultation is initiated on the date the package is received, unless the initiation package is incomplete. If the package is incomplete, the Service notifies the Federal agency of the deficiencies. If a complete package is submitted, the Service should provide written acknowledgment of the request within 30 working days. This written acknowledgment is not mandatory, but is encouraged so that there is documentation in the administrative record that formal consultation has been initiated.
4. From the date that formal consultation is initiated, the Service is allowed 90 days to consult with the agency and applicant (if any) and 45 days to prepare and submit a biological opinion; thus, a biological opinion is submitted to the Federal agency within 135 days of initiating formal consultation. The 90-day consultation period can be extended by mutual agreement of the Federal agency and the Service; however, if an applicant is involved the consultation period cannot be extended more than 60 days without the consent of the applicant. The extension should not be indefinite, and a schedule for completion should be specified.

What's the difference between informal and formal consultation?

Informal consultation is an optional process that is designed to help the applicant and the Lead Federal agency determine whether formal consultation is needed. It includes all discussions, correspondence, etc., between the Service, the action agency, and the applicant, and has no specified timeframe for completion. Federal agencies may use this period to work with the Services on project design and conservation actions that would remove all adverse effects and alleviate the need for formal consultation. Formal consultation is a mandatory process for proposed projects that may adversely affect listed species, is initiated in writing by the Lead Federal agency, and concludes with the issuance of a biological opinion by the Service. The Service strongly encourages the use of informal consultation so that projects can be designed with minimal impact to listed species, possibly resulting in a determination of no adverse effect, eliminating the need for formal consultation.

APPENDIX D

Description of Local Flood Control Funding Process

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Technical Memorandum

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	<ul style="list-style-type: none"> • Curb and Gutter • Percolation Basins • Storm Drain System
Overtopping of Creek Banks	<ul style="list-style-type: none"> • 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).

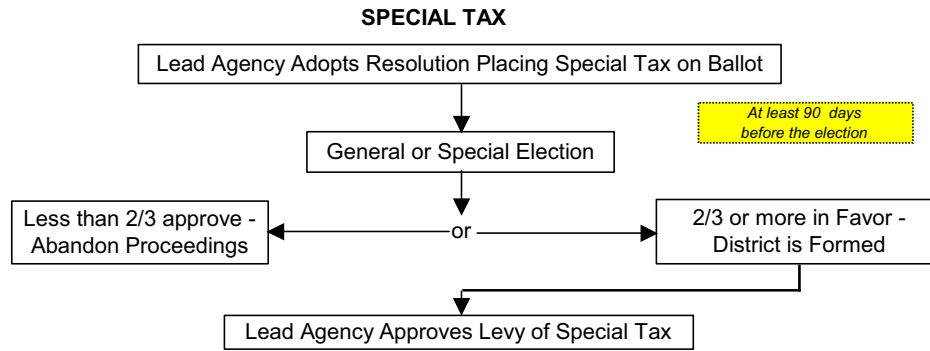


Figure 1 – Special Tax Adoption Process

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.

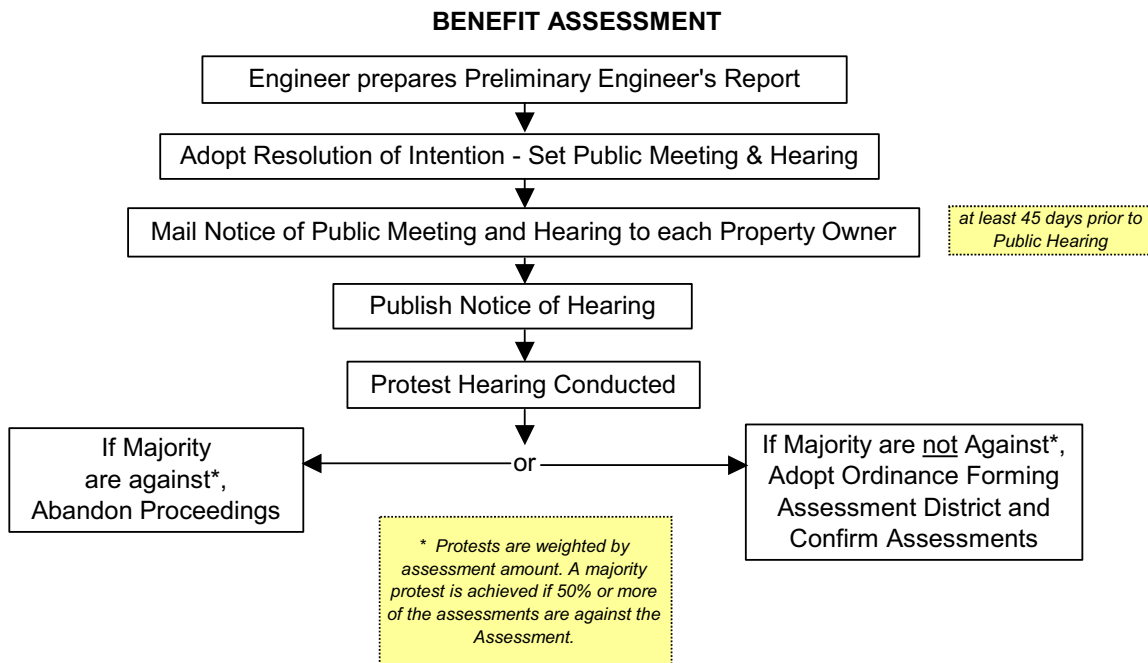


Figure 2 – Benefit Assessment Adoption Process

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.

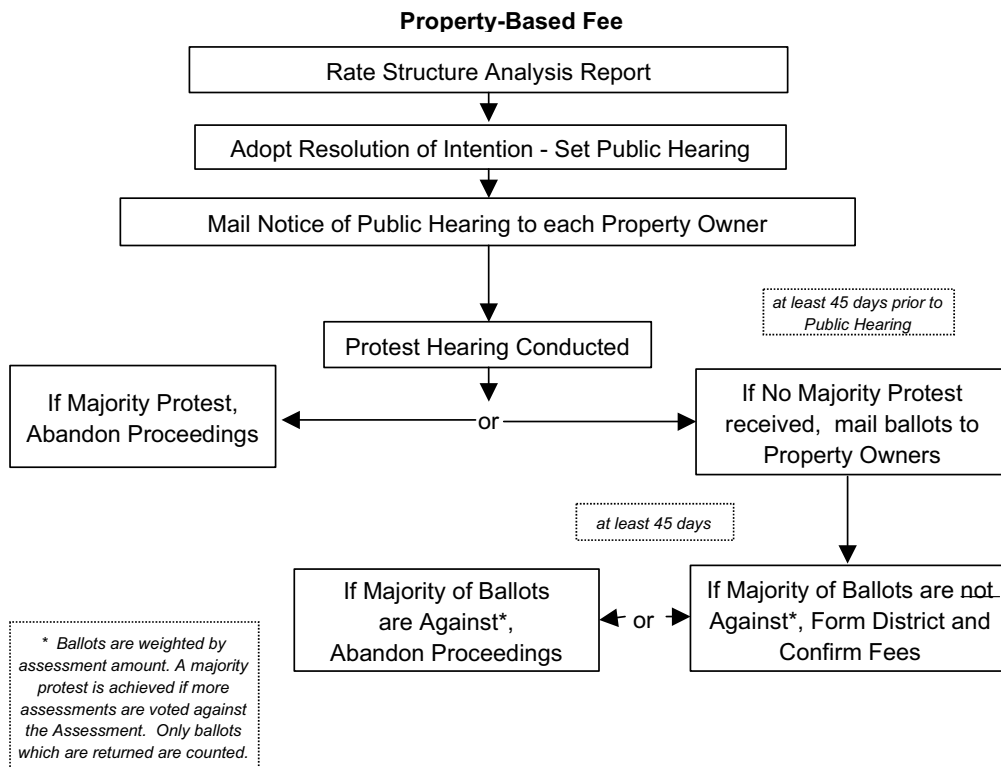


Figure 3 – Property Based Fee Adoption Process

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.

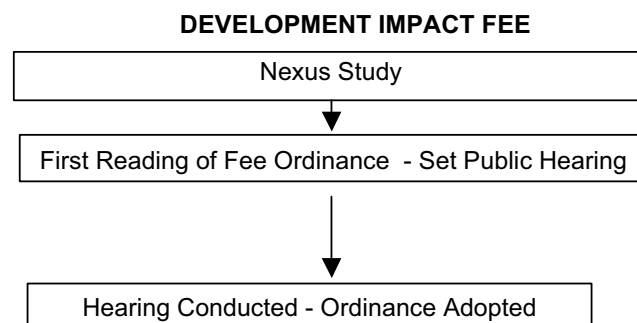


Figure 4 – Development Impact Fee Adoption Process

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 sponsor¹ 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	<p>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.</p> <p>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:</p> <ul style="list-style-type: none">• 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	<p>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:</p> <ul style="list-style-type: none">• 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	<p>The Flood Protection Corridor Program grant can be used for projects that include:</p> <ul style="list-style-type: none">• 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. <p>The project location must also be located at least partially in:</p> <ul style="list-style-type: none">• 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.

Funding Level	<ul style="list-style-type: none">• 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• 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, 16 th 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	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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

(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	<p>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.</p> <ul style="list-style-type: none">• FY2003 through FY2005 - \$50 million for each FY
Legislative Authority	Section 212 WRDA 1999
Contacts	<p>Address: US Army Engineer District, Los Angeles PO Box 2711 Los Angeles, CA 90053-2325</p> <p>Telephone: (213) 452-5300</p> <p>Internet: http://www.spl.usace.army.mil/</p>

(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: <ul style="list-style-type: none">• 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 streams, or projects as complex as complete restoration of a streams to its original, natural state. <ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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://www.dpla.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	<p>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.</p> <p>Eligible projects under this article may do any of the following:</p> <ul style="list-style-type: none">• 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	<p>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</p> <p>Telephone: (916) 341-5250 Internet: http://www.swrcb.ca.gov/prop13/index.html</p>

(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: <ul style="list-style-type: none">• 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, 15 th Floor Sacramento, CA 95814 Telephone: (916) 341-5250 Internet: http://www.swrcb.ca.gov/prop13/index.html

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APPENDIX E

Contacts for More Information

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San Luis Obispo County, California

Contact List

County Government Center

San Luis Obispo Room 207

Office Hours

Mon. - Fri.

8:00 A.M. - 5:00

P.M.

General Information	Phone	(805) 781 - 5252
From toll areas only	Phone	(800) 834 - 4561
Engineering Department	FAX	(805) 781 - 1229
Development Services	Phone	(805) 781 - 5280
Franchise Administration	Phone	(805) 781 - 5239
Garbage Collection, Recycling	Phone	(805) 781 - 5259
Traffic	Phone	(805) 781 - 5268
Road Maintenance	Phone	(805) 781 - 4466
Utilities	Phone	(805) 781 - 5116
Traffic/Road/Utilities	Fax	(805) 781 - 1330
General Email Address	Email	pwd@co.slo.ca.us

San Luis Obispo County, California**Community Advisory Councils**

Community Advisory Councils are made up of residents from the area covered by the advisory group. They volunteer their time to represent community interests within the county processes. Staff refers projects that require use permits and subdivision requests to the councils for comments concerning community fit. Applicants can approach the councils with their project proposals prior to applying with the county for early input and recommendations. For information on the Advisory Councils for each area, meeting times and locations, select one of the following:

Avila Valley Advisory Council (AVAC)	http://www.avilavalley.org
Cayucos Citizens' Advisory Council	http://www.cayucos-ccac.org
Creston Advisory Body (CAB)	http://crestonadvisorybody.org salyons@airspeedwireless.net
Los Osos Community Advisory Council (LOCAC)	http://www.locac.us
South County Advisory Council West Tefft Corridor Design Plan	http://www.scac.ca.gov
North Coast Advisory Council (NCAC) Cambria Design Plan	http://www.northcoastadvisorycouncil.org
San Miguel Advisory Council San Miguel Design Plan	http://sanmigueladvisorycouncil.com
Santa Margarita Area Advisory Council Santa Margarita Design Plan	http://www.smaaonline.org
Oceano Advisory Council	elitaw@aol.com
Shandon Advisory Council	shandoncouncil@yahoo.com
Templeton Area Advisory Group (TAAG) Templeton Design Plan	http://www.taaginfo.org

The Planning and Building Department has created a handbook for San Luis Obispo County Community Advisory Council members to use as a guide to providing important feedback and recommendations on issues to the Board of Supervisors, the Planning Commission and the Department of Planning and Building. It identifies what an advisory council is and its role in the planning process. It also offers suggestions on procedures and conduct of the advisory council. View the handbook here:

[Community Advisory Council Handbook](#)

One of the duties assigned to Community Advisory Councils is the responsibility to review general plan and development projects that are proposed in their community. Therefore, it is very important that the members both know and understand planning and land use policy and law. We've provided a manual that explains the definition and purpose of planning, and some important aspects of planning. Learn more about it here:

[Community Advisory Council Training Manual](#)



[Home](#)

[Facts for
Landowners](#)

[Watershed
Description](#)

[Flood
History](#)

[Zone 9
Information](#)

[Contacts](#)

Contact List for Creek-Related issues

For information related to Zone 9 Flood Control District, contact:
SLO County Flood Control District and Water Conservation District
Department of Public Works
(805) 781-5252

For a site visit to discuss creek maintenance concerns, contact:
Coastal San Luis Resource Conservation District
(805) 772-4391

To discuss this website call Julie Thomas at (805)772-4391 or email: jthomas@coastalrcd.org

Click a category for contact listings:

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Resource Groups

**Land Conservancy of
SLO County**
(805) 544-9096

The Land Conservancy of San Luis Obispo County is a local, non-profit land trust for San Luis Obispo County. The Land Conservancy's mission is to protect and preserve open space lands with environmental, agricultural, scenic, and cultural values. The Conservancy's mission is achieved through conservation easements, fee purchases, and ecological restoration.

**Central Coast Salmon
Enhancement**
Phone (805) 473-8221

Central Coast Salmon Enhancement has watershed programs that have engaged hundreds of people in collaboratively planning watershed restoration in our local watersheds. By providing objective technical expertise in these forums, they help stakeholders become informed and empowered, which hopefully leads to balanced, nonpolitically-motivated decisions regarding watershed health. Priority projects listed in the plans to recover Steelhead trout are now being implemented.

**Environmental Center of
San Luis Obispo
(ECOSLO)**
(805) 544-1777

The Environmental Center of San Luis Obispo (ECOSLO) is a non-profit, community-based environmental education and advocacy center. ECOSLO focuses on environmental issues, including environmental policy, land use and land development, farmworker safety, water quality, riparian restoration, and public recreation.

In cooperation with the City of San Luis Obispo, ECOSLO operates a volunteer land stewardship program called SLO Stewards. SLO Stewards focuses on native plant restoration and trail construction on city-owned open space and riparian lands.

**California Native Plants
Society - San Luis
Obispo Chapter**

The California Native Plant Society (CNPS) is a statewide non-profit organization of amateurs and professionals with a common interest in California's native plants. The CNPS, working through its local chapters, seeks to increase understanding of California's native flora and to preserve this rich resource for future generations. Their website lists native plants as well as information on where to buy them.

**San Luis Obispo County
Farm Bureau**
(805) 543-3654

The San Luis Obispo County Farm Bureau is the local agricultural education and advocacy organization and is affiliated with both state and national Farm Bureau federations. The County Farm Bureau works to unite farmers, ranchers and those concerned with agriculture locally to promote, protect and improve common agricultural interests.

Local Government Agencies

Send Us an email
jthomas@coastalrccd.org

Start here with an email to the Watershed Coordinator.

**County Zone 9 Flood
District**
(805) 781 - 5252

The County Zone 9 Flood District funds flood control services for the watershed area of San Luis Creek and its tributaries.

**Coastal San Luis Resource
Conservation District**
(805) 772-4391

Resource Conservation Districts (RCDs) are an established branch of state government. The Coastal San Luis RCD has a watershed coordinator funded by the State Department of Conservation. This coordinator assists local watershed programs throughout the region with technical expertise and organizational assistance. The RCD maintains relationships with private landowners and provides opportunities for enhancement projects.

**County of SLO Public
Works Dept**
(805) 781 - 5252

The County of San Luis Obispo is currently working through the Zone 9 Flood Control and Water Conservation Committee in non-incorporated areas. The County is responsible for NPDES permits for stormwater.

State Agencies

**California Dept. of Fish
and Game**
(916) 445-0411

The California Department of Fish and Game (CDFG) is involved in the San Luis Obispo Creek Watershed at several levels. The CDFG maintains a local staff biologist that assists with project permits for work in a watershed. Through this process conditions are attached to projects to prevent degradation of stream habitats. The CDFG also maintains staff for sport fish restoration. The sport fish restoration team assists with local fish habitat improvement projects by supplying technical expertise and even works directly on some of these projects.

**Regional Water Quality
Control Board**
(805) 549-3147

Section 303(d) of the 1972 Clean Water Act requires that states develop lists of impaired waters. The law requires that these jurisdictions establish priority rankings for water on the lists, and develop action plans, known as Total Maximum Daily Loads (TMDL), to improve water quality. The Regional Water Quality Control Board, Central Coast Region is currently developing Total Maximum Daily Load (TMDL) studies and plans for nutrients, pathogens, and priority organics (PCB's). These processes are expected to be ongoing over the next two years.

**California Coastal
Commission**
(831) 427-4863

The Coastal Commission, in partnership with coastal cities and counties, plans and regulates the use of land and water in the coastal zone. Development activities, which are broadly defined by the Coastal Act to include (among others) construction of buildings, divisions of land, and activities that change the intensity of use of land or public access to coastal waters, generally require a coastal permit from either the Coastal Commission or the local government.

Federal Agencies

Army Corps of Engineers
(213) 452-3908/3333

The San Luis Obispo Creek Watershed lies within the Los Angeles District of the South Pacific Division of the Army Corps of Engineers (Corps). The Congress of the United States has assigned to the Army Corps of Engineers the responsibility for regulation of construction and other work in the waters of the United States. The Corps is charged with protecting our nation's harbors and navigation channels from destruction and encroachments, and with restoring and maintaining environmental quality. This is accomplished by regulating activity in three areas: discharge of dredged or fill material in coastal and inland waters and wetlands, construction and

dredging in navigable waters of the United States, and transport of dredged material for dumping into ocean waters.

U. S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (USFWS) is currently working with the U.S. Army Corps of Engineers, and other "Lead Agencies" as a consulting agency for the California red-legged frog. The USFWS provides biological opinions related to projects occurring in local streams and wetlands in order to assess their potential for injuries to California red-legged frogs. If projects have a potential to impact California red-legged frogs or their habitat, the USFWS prepares terms and conditions for project permits that are intended to protect California red-legged frogs and their habitat. The terms and conditions for protection of frogs are also consistent with protection of trout habitats.

NOAA Fisheries Service/NMFS

The National Marine Fisheries Service is currently working with the U.S. Army Corps of Engineers, and other "Lead Agencies" as a consulting agency for steelhead trout. This agency provides biological opinions related to permitted projects occurring in local streams in order to assess their potential impact on steelhead trout. If projects have a potential to impact steelhead or their habitat, the National Marine Fisheries Service prepares terms and conditions for project permits that are intended to protect steelhead and their habitat. NMFS is also currently monitoring several mitigation projects in the San Luis Obispo Creek Watershed.

Federal Emergency Management Agency (FEMA)

1 (800) 621-FEMA (3362)

On March 1, 2003, the Federal Emergency Management Agency became part of the U.S. Department of Homeland Security. The primary mission of the Federal Emergency Management Agency is to reduce the loss of life and property and protect the Nation from all hazards, including natural disasters, acts of terrorism, and other man-made disasters, by leading and supporting the nation in a risk-based, comprehensive emergency management system of preparedness, protection, response, recovery, and mitigation.

Natural Resources Conservation Service

Formerly the Soil Conservation Service, the Natural Resource Conservation Service is a federal agency under the Department of Agriculture. The NRCS lists as its prime responsibility the conservation of natural resources on private land. NRCS programs throughout the country include the Environmental Quality Incentives Program, Wildlife Habitat Incentive Program, the Wetlands Reserve Program, the Grazing Lands Conservation Program, the Soil and Watershed Surveys, and the Flood Risk Reduction Program.

Reference: Most descriptions are from the San Luis Obispo Creek Watershed Enhancement Plan by the Land Conservancy of San Luis Obispo County

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APPENDIX F

Board of Supervisors
Resolution 68-223

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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 ap-
portionment of local costs of planning, design, construction, opera-
tion 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 Super-
visors of the San Luis Obispo County Flood Control and Water Conser-
vation District, State of California, that the following shall be the
policy of the San Luis Obispo County Flood Control and Water Con-
servaion 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 other-
wise abandoned, then the cost of the zone formation proceed-
ings 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.

ATTEST:

Heil
Chairman of the Board of Supervisors

Ruth Warnken
Clerk of said Board of Supervisors

SLO CO FC & WCD
in
STATE OF CALIFORNIA, } ss.
County of San Luis Obispo, }

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, 19 68.

[SEAL]

RUTH WARNKEN
County Clerk and Ex-Officio Clerk of the Board of Supervisors
By Lillian K. Stewart
Deputy Clerk