



Future Phases

CHAPTER 5

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FUTURE PHASES

As discussed earlier, the goal of the first phase of the Pajaro River Watershed Study is to develop tools to model the watershed and gain an understanding of the effects that human processes and projects have had and could continue to have on flooding in the lower Pajaro River reaches. As outlined, the next phases of the study will identify, select, and begin to design projects that will “implement flood prevention and control strategies within the watershed”¹¹ as well as enhance opportunities for water supply, environmental restoration, groundwater protection, and intergovernmental participation. This section of the report provides a glimpse at some key issues that will arise and identify some preliminary alternatives that have worked in other watersheds with similar problems.

Key Issues

Certain topics and items of concern tend to be common among most projects. These include consensus, coordination with other studies, environmental matters, and funding. At this point in the PRWS, a strong foundation has been laid for most of these matters. For the others, being aware of the concerns and complying with any laws or regulations is the best preparation. Below is a brief description of some of these issues, why they are important, and any work that has been done to minimize their possible effects on the study.

CONSENSUS

One of the keystones of a successful program is being sure that people agree on its value and believe that the best possible projects have been developed. In addition to providing flood protection, the PRWS can produce a product with multiple benefits for individual projects or include several projects in the final designs so that all stakeholders benefit from the study.

Consensus within two groups is important for the PRWS. One is consensus within the Authority. Agency representatives meet at least once a month to discuss progress on the study and answer any questions that arise. With all eight agencies discussing issues of concern and working together, it is possible to arrive at a solution that is both technically feasible and politically friendly.

The other aspect of consensus is the public opinion. Through outreach efforts, it is possible to both educate the public and obtain their input for the study. It is important to learn what matters to the stakeholders since they are the ones who will be directly impacted by any projects or conclusions that come out of the study. The Phase 2 Outreach Plan has details regarding this important aspect of the Pajaro River Watershed Study including developing a graphic identity, outreach meetings, media awareness, and a website.

COORDINATION

Coordination with past, current, and future projects affecting the Pajaro River watershed is crucial to the success of the study. Past projects have identified areas of concern for the local residents and collected a great deal of

¹¹ Keeley, “Assembly Bill 807: Pajaro River Watershed Flood Prevention Authority Act.” October 10, 1999.

data for the watershed. Project alternatives have been identified, as have benefits and drawbacks for each. Current projects are accomplishing the same feats as past projects but are more relevant. Aspects of the study such as project identification and outreach can be combined in order for both projects to be more efficient. Future studies should be able to dovetail with ongoing efforts for this study.

Current relevant projects and studies include:

- Lower Pajaro River Flood Protection Project
- San Luis Reservoir Low Point Improvement Project
- Various Sediment Projects with the Regional Water Quality Control Board
- Pajaro Valley Water Management Agency Water Supply Project
- Llagas Creek Flood Protection Project

ENVIRONMENT

Impacts to the environment are very important considerations when planning any project or developing an area. Threatened and endangered species such as the steelhead trout, the California red-legged frog, the tidewater goby, and the western pond turtle must be protected and their habitats preserved. The PRWS will be in compliance with the Endangered Species Act (ESA). In addition to the ESA and biological environmental impacts, the Clean Water Act must be adhered to as well. For example, the Pajaro River was listed on the 303(d) list as a high priority site for nutrients and Llagas Creek is listed for both nutrients at a high priority and sedimentation at a medium priority. San Benito River was listed on the 1998 list as a medium priority for sedimentation and Hernandez Reservoir was a medium priority for mercury.^{12,13}

FUNDING

At this point, funding for final project design, any construction work, and all follow-up work has yet to be identified. Some money sources that could be applied to this project include:

- Army Corps of Engineers funding through Civil Works program and continuing authorities
- Natural Resources Conservation Service PL-566 program (Watersheds and Flood Prevention)
- FEMA Highway Bridge Rehabilitation and Replacement and T21 programs
- State water bonds

¹² Central Coast Regional Water Quality Control Board. "2002 Revision of the Clean Water Act Section 303(d) List of Water Quality Limits: Section 303(d) List Proposals."

¹³ Central Coast Regional Water Quality Control Board. "1998 303(d) List and TMDL Priority Schedule."

Preliminary Projects

Several flood control options have already been identified based on work done in other watersheds. This section identifies the rationale behind each project and the project benefits and drawbacks. Based on physical geography and urban development patterns, the ideas can be divided into two groups.

The following descriptions do not relate any project preference or detailed feasibility study. It is simply a list of ideas that have been used in other places and shown to meet the goals and objectives of this study.

DOWNSTREAM PROJECTS

The Lower Pajaro River Flood Protection Project has been studying since June of 2001 possible solutions to reduce the threat of flooding in the Watsonville area. It appears that a combination of projects that would maximize stakeholder satisfaction will be the best alternative. The flood protection elements will probably include:

- Some floodwall/levee raise
- Bridge modifications and replacements
- Vegetation management
- Some dredging
- Some set-back onto agricultural land¹⁴

These options are classic flood protection solutions and have proven to be effective at reducing flood risk. Drawbacks include environmental implications and loss of usable land along the riverbanks.

The PRWS will also consider implementation alternatives for an overflow bypass channel. A reasonable flow for the existing flood protection structures would need to be established. Any excess flow would be diverted into a separate channel. The channel would nearly parallel the river until a point downstream of the flood danger zone where the water would either be reintroduced to the river or flow into the ocean. This project could provide valuable protection and minimizes environmental impacts and loss of land. An open channel bypass does use some agricultural land though and the cost can be high. To eliminate lost agricultural land it is possible to dig a subterranean channel. The excavation cost may make this option prohibitive though.

UPSTREAM PROJECTS

Local detention basins would provide some relief from frequent storm events and mitigate water quality problems such as the sedimentation and erosion caused by those events. Since the impact of the low return period storm is raised significantly by urbanization, it is logical to place these ponds in areas just downstream of urban areas. The basins can be associated with any major stream and can provide other benefits such as ground water recharge. Drawbacks include loss of land that could be used for other purposes and possible loss of habitat.

¹⁴ "Draft Pajaro River Flood Protection Community Planning Process Newsletter". May 2002.

Building on the idea of detention basins, it is also possible to implement regional detention basins. These larger off-stream storage sites provide a greater degree of flood protection due to their larger capacity. As Soap Lake does, they act as natural, temporary reservoirs. The benefits and drawbacks are the same as for the local detention basins but on a larger scale.

As was shown and discussed in previous sections, the upstream dams, Hernandez, Pacheco, Uvas, and Chesbro, have provided a great deal of flood protection. One possibility for additional protection is to increase the capacity of these dams. Some land next to the reservoir would be affected during large storms. Another possibility is to build a new dam. The new dams would not only provide the greatest amount of flood protection but also provide water quality benefits, a possible water supply, groundwater recharge, new wetlands, and recreation. The drawbacks are large however. Usable land is lost, habitat is destroyed, species might be impacted, and the project is very expensive.