

CHAPTER 5

CUMULATIVE IMPACTS

5.1 INTRODUCTION

In addition to the analyses discussed in chapters 1 through 4, both CEQA and NEPA require the EIS/EIR to identify and analyze cumulative impacts. NEPA Section 1508.7 defines a cumulative impact to a project area as that which can occur as a result of “individually minor but collectively significant actions taking place over a period of time.” This impact can occur “when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions.”

5.2 CUMULATIVE PROJECTS

The activities below may produce a cumulative impact to the Bolinas Watershed.

Stream Restoration

A grass roots environmental group called Stream Matrix undertook a restoration project on Easkoot Creek in Stinson Beach in 1999. With the approval and participation of local landowners, small flood-control barriers were removed from the creek in the spring of 1999 (Lewis 1999a). Stinson Beach County Water District agreed to maintain flows in the creek to protect the fishery until further restoration work on the creek could be performed (Lewis 2000). The NPS staff at GGNRA is planning to conduct an Easkoot Creek Stream Restoration Project in September-October of 2002. SBCWD will work with GGNRA staff to maintain and restore instream flows for fish (Fong 2002).

In October and November 2001, the Audubon Canyon Ranch completed the removal of artificial berms from the creek in Volunteer Canyon to reduce the volume of sediment being deposited in the lagoon (Schwartz 2002).

Pond Fencing

Stream Matrix is also working with private property owners to fence off the pond at the head of the Bolinas Lagoon in order to protect red-legged frogs from cattle (Lewis 1999a).

Watershed Enhancement

PRNS staff are preparing a watershed enhancement program in Pine Gulch Creek that would provide for offstream irrigation storage for organic farms in the area. The program is in the planning stages, but PRNS staff hope to have an application prepared within the next few years (Ketchum 2002).

PRNS will also be issuing Watershed Management Recommendations sometime in the next two to three years focusing on the Pine Gulch Creek area (Ketchum 2002).

Fisheries Investigations

PRNS staff have been conducting fishery investigations in Pine Gulch Creek, including installing smolt traps, making sedimentation assessments, and collecting data on water volume, quality, and temperature, but does not appear to have any immediate plans for stream restoration work because only part of the creek is within the park's jurisdiction (Smith 1999). The PRNS fisheries monitoring program is ongoing (Ketchum 2002).

Gravel Removal

MCOSD for the past ten years has conducted an annual gravel removal project on the lower end of Pine Gulch Creek. This entails removing approximately 1,000 cubic yards of gravel from the creek. This process includes electrostunning and relocating resident fish from that section of the creek farther downstream, diverting the water flow for 175 feet, and excavating the gravel and sediment trapped in the pond. The gravel is then loaded into trucks and either given to private landowners or used for road base on the mesa (Sanford 1999). MCOSD removes the gravel under short-term permits from the California Coastal Commission and the CDFG. It hopes to obtain long-term permits from CDFG sometime in the future (Miska 2002).

Marine Mammal Awareness

MCOSD, in collaboration with Sanctuary Education Awareness and Long-Term Stewardship (SEALS) and the National Oceanic and Atmospheric Administration (NOAA), has initiated a project designed to protect the marine mammals in the lagoon. This includes a brochure designed to educate the public, including kayakers, on the sensitive nature of the seal population in the lagoon. In addition, seal protection signs have been installed around the lagoon (BLTAC 1999a).

GFNMS conducts routine shoreline surveys (every other month and year-round), with some of the survey lines going around Bolinas Lagoon. GFNMS also implements a weekly, year-round Seal Monitoring Program to observe how seals (primarily harbor

seals) respond to human disturbances. Both are long-term continuous projects (Roletto 2002).

Public Works and Planning

Caltrans has no projects scheduled in the project area for the foreseeable future (Wu 2002), and no major public works projects are planned for the Bolinas Lagoon area. The Stinson Beach County Water District recently completed replacing an old water line that runs out into the middle of the lagoon, with a new four-inch steel pipe buried along the edge of Highway 1. No additional work is scheduled for the project area (Black 2002).

Marin County has a few small development projects either approved or undergoing environmental review for the west Marin area, although none of them are within the project area (Crawford 2002; Lai 2002). The only large development project slated for approval is the Point Reyes Affordable Homes Project, described in further detail below. The following projects are either approved or are undergoing review at either the county level or other agency level for the west Marin area:

- **Point Reyes Affordable Homes Project, Downtown Point Reyes Station.** Marin County has approved this project, and the California Coastal Commission is reviewing it. If approved, construction is expected to commence in late 2002 for 36 units, including single-family homes and apartments.
- **Expansion of Point Reyes Seashore Lodge, Olema Creek.** The proposed project would involve expanding the facility, located near the corner of Highway 1 and Bear Valley Road, by building a 13-room lodge with a two-story conference center building immediately north of the Seashore Lodge. The project would also involve new parking spaces and a mound septic system to accommodate the new facilities. This proposal is currently undergoing county environmental review and will likely involve preparation of an EIR (Lai 2002).
- **Olema Campground Expansion, Lawson's Landing.** This proposal is undergoing county environmental review and would involve legalizing some current uses and making minor improvements at the campground.
- **Trailer Park, Lawson's Landing.** This application is on file with the county, which anticipates an EIR being prepared. This trailer park is operating without permits, and the applicant seeks permits for current uses.
- **Restaurant Remodeling, Marshall, Mixed Cove Overlooking Tomales Bay.** This application is on file with the county and is undergoing environmental review. If approved, the project would involve the remodeling and renovating a restaurant off Highway 1 overlooking the ocean and renovating six or seven cottages on the opposite side of the

Highway 1. The proposed project would also include building a small number of cottages upland of Highway 1.

- **Strauss Dairy Creamery, Marshall, Mixed Cove, Tomales Bay.** This application is on file with the county and is undergoing environmental review. If approved, the project would involve expanding the facility.
- **Giacomini Cheese Processing Facility, outside Point Reyes.** This application is undergoing county environmental review. If approved it would involve adding a small cheese processing center to the facility.

PRNS staff recently completed an environmental assessment for the ranch at the north end of the lagoon, covering existing land uses at this site. Some improvements will occur at the property as a result of the completed environmental review, including installation of a new septic system on the property. No new development will take place at this site without additional environmental review (Ketchum 2002).

Ongoing Management Projects

Ongoing activities that may cumulatively affect lagoon resources include diverting water from Pine Gulch and Easkoot creeks, maintaining septic systems and water quality, and managing vegetation (Fong 2000b; Schwartz 2002). PRNS staff are updating the park's management plan. The process started in 2000 and will probably continue through 2004 or 2005. The document would provide management guidance for 20 -years following its release (Ketchum 2002).

5.3 CUMULATIVE IMPACTS

5.3.1 Cumulative Resource Impacts

As discussed above, cumulative impacts occur when the proposed project's impacts contribute to impacts from other projects or activities in the area, and, collectively, these activities result in impacts greater than those for each individual project or activity. An impact to a particular resource may be considered to be less than significant when assessed for the proposed action alone but, when considered together in the context of other activities in the area, may be considered to be significant. For each resource, potential impacts associated with other projects and activities in the project vicinity (discussed above) were assessed and considered in relation to the proposed project impacts discussed in Section 4. The potential for cumulative impacts are discussed below for each resource area.

5.3.2 Hydrology and Groundwater

Riparian Alternative

A number of projects described above address issues related to improving conditions in the watershed of the lagoon or to altering tributaries. Future watershed management actions could have an impact on the amount of water or sediment that is transported to the lagoon. Most of these projects are relatively small in scale and would probably

have small beneficial effects of reducing sediment loading to the lagoon. Dredging activities for the Riparian Alternative would occur downstream of these watershed projects and would not affect stream water quality or quantity. Altering the tidal prism under the Riparian Alternative would probably have a beneficial effect on water quality and circulation in the lagoon relative to the needs of anadromous fish, which would increase the chances of success of stream restoration projects aimed at reestablishing fish migration through the lagoon. The impacts on biological resources are discussed further below.

Estuarine Alternative

The cumulative effects of the Estuarine Alternative would be similar to those of the Riparian Alternative, except that the Estuarine Alternative would shorten the Pine Gulch Creek delta, probably increasing tidal influence in Pine Gulch Creek. Such changes in delta hydraulics and water quality could affect biological resources, such as anadromous fish runs.

No Action Alternative

If no action is taken to prevent closure of the lagoon inlet channel, then tributary stream restoration projects would be affected because many of these projects have the objective of restoring anadromous fish runs and otherwise taking advantage of the estuary characteristics of the lagoon.

5.3.3 Biological Resources

Riparian Alternative

Improved watershed management would have an impact on the water quality or amount of sediment that is transported to the lagoon. This would improve spawning habitat in the streams, as well as overall conditions necessary for the survival of smolt. Most of these projects are relatively small but could have a beneficial cumulative impact on stream quality. Stream restoration and fencing of the pond near the northern end of the lagoon would have a net beneficial impact on the red-legged frog. If performed on a large enough scale, the projects mentioned above would have a significant beneficial impact on wildlife habitat in the Bolinas Lagoon watershed.

Estuarine Alternative

Because most of the proposed improvements would occur independently of the alternative that is chosen, there would be no difference in the cumulative impact of other projects between the Riparian and Estuarine alternatives.

No Action Alternative

No action would result in a closed lagoon, through which anadromous fish would not pass. Therefore, the improvements to the watershed and feeder streams would have no impact on anadromous fish because they would have no access. The improvements to the red-legged frog habitat would be the same as those under the two alternatives mentioned above.

5.3.4 Geology, Soils, and Seismicity

Riparian Alternative

The Riparian Alternative is not expected to contribute to any cumulative geologic impacts.

Estuarine Alternative

As with the Riparian Alternative, the Estuarine Alternative is not expected to contribute to any cumulative geologic impacts.

No Action Alternative

The natural geomorphic evolution of the lagoon from a tidal estuary to a freshwater-dominated marshland could have a significant impact on the viability of stream restoration projects designed to interface with a tidal estuary. The nature and rate of evolution of the lagoon is unpredictable due to the unpredictability of seismic activity and fault displacement.

5.3.5 Cultural Resources

Riparian Alternative

Cumulative Impacts for cultural and Native American resources would occur if, during ground disturbing construction for development or stream restoration on lands or submerged lands in the area, unrecorded or previously recorded cultural or Native American sites are destroyed. Implementation of mitigation measures identified in Section 4.5, and compliance with state and federal cultural resources laws on the cumulative projects, would limit these impacts to less than significant.

Estuarine Alternative

Cumulative impacts for this alternative are identical to those of the Riparian Alternative, and, consequently, if the suggested mitigation measures were used, impacts would be reduced to less than significant.

No Action Alternative

There are no anticipated cumulative impacts for the No Action Alternative.

5.3.6 Public Access and Recreation resources

Riparian Alternative

The Riparian Alternative would contribute to long-term beneficial impacts on recreation resulting from stream restoration and watershed enhancement projects. These projects, in conjunction with the Riparian Alternative, would result in enhanced recreational opportunities in the long term for fishing and wildlife viewing in the project area.

Estuarine Alternative

The Estuarine Alternative would contribute to long-term beneficial impacts on recreation resulting from stream restoration and watershed enhancement projects. These projects, in conjunction with the Riparian Alternative, would result in enhanced recreational opportunities in the long term for fishing and wildlife viewing in the project area.

No Action Alternative

Few of the cumulative projects would contribute in any significant way to recreation resources in the project area; any such cumulative impacts would be negligible in light of the significant impacts on recreation resources under the No Action Alternative.

5.3.7 Land Use***Riparian Alternative***

The projects mentioned above would not conflict with existing general plan designations or land uses and would have no adverse impacts on land use resources. The Riparian Alternative's impacts, therefore, are limited to direct and indirect impacts discussed in Section 4.3.7.

Estuarine Alternative

The projects mentioned above would not conflict with existing general plan designations or land uses and would have no adverse impacts on land use resources. The Estuarine Alternative's impacts, therefore, are limited to direct and indirect impacts discussed in Section 4.3.7.

No Action Alternative

The projects mentioned above would not conflict with existing general plan designations or land uses and would have no adverse impacts on land use resources. The No Action Alternative's impacts, therefore, are limited to direct and indirect impacts discussed in Section 4.7.

5.3.8 Air Quality***Riparian Alternative***

Cumulative air quality impacts would occur when multiple projects affect the same geographic areas at the same time or when sequential projects extend the duration of air quality impacts on a given area over a longer period. The air quality impacts of the proposed project stem primarily from temporary dredging and excavation activities. Ozone precursor emissions from heavy equipment would contribute slightly to area-wide and regional air quality conditions. Fugitive dust emissions from land-based excavation generally would have a more localized impact, with the most noticeable impacts occurring within half a mile or so of the project site.

Most of the projects and programs identified for cumulative analysis have minimal equipment operations and limited potential for generating fugitive dust from ground disturbance. Some of the stream restoration projects have already been completed. Pond fencing, watershed enhancement, marine mammal, and fisheries investigation projects have little potential for cumulative air quality impacts. The annual MCOSD gravel removal project on Pine Gulch Creek would have minor cumulative air quality impacts during implementation of either the Riparian Alternative or the Estuarine Alternative. But gravel removal quantities are very small under the MCOSD program, resulting in minimal emissions from equipment operations and truck transport of the removed material. Most identified development projects in Marin County are far enough from Bolinas Lagoon so that cumulative air quality impacts would not be significant.

Estuarine Alternative

Cumulative impacts for this alternative are identical to those of the Riparian Alternative.

No Action Alternative

There would be no air quality impacts from the project as result of the No Action Alternative; therefore there would be no cumulative air quality impacts.

5.3.9 Onshore Traffic and Transportation

Riparian Alternative

The ongoing gravel removal project in Pine Gulch Creek might have a minor cumulative impact on transportation resources in conjunction with the Riparian Alternative because it would require trucks to carry the gravel, and these trucks would be operating on the same roadways as the trucks carrying loads of soil and vegetation removed from the lagoon.

Estuarine Alternative

The ongoing gravel removal project in Pine Gulch Creek might have a minor cumulative impact on transportation resources in conjunction with the Estuarine Alternative because it would require trucks to carry the gravel, and these trucks would be operating on the same roadways as the trucks carrying loads of soil and vegetation removed from the lagoon.

No Action Alternative

There would be no transportation impacts from the project as a result of the No Action Alternative; therefore, there would be no cumulative air quality impacts.

5.3.10 Marine Traffic and Transportation

Riparian Alternative

None of the cumulative projects listed above are expected to have any impact on marine transportation because these are all land-based projects; therefore, there would be no cumulative marine transportation impacts as a result of this alternative.

Estuarine Alternative

None of the cumulative projects listed above are expected to have any impact on marine transportation because these are all land-based projects; therefore, there would be no cumulative marine transportation impacts as a result of this alternative.

No Action Alternative

None of the cumulative projects listed above are expected to have any impact on marine transportation because these are all land-based projects; therefore, there would be no cumulative marine transportation impacts as a result of this alternative.

5.3.11 Noise

Riparian Alternative

Cumulative noise impacts would occur when multiple projects affect the same geographic areas at the same time or when sequential projects extend the duration of noise impacts on a given area over a longer period of time. The noise impacts of the proposed project stem primarily from temporary dredging and excavation activities. Noise from equipment operations generally would have a very localized area of impact, with the most noticeable impacts occurring within a quarter mile of the project site.

Most of the projects and programs identified for cumulative analysis have minimal equipment operations and limited potential for generating significant noise levels. Some of the stream restoration projects have already been completed. Pond fencing, watershed enhancement, marine mammal, and fisheries investigation projects have little potential for cumulative noise impacts. The annual MCOSED gravel removal project on Pine Gulch Creek would have minor cumulative noise impacts during implementation of either the Riparian Alternative or the Estuarine Alternative. But gravel removal quantities are very small under the MCOSED program, resulting in minimal equipment operations and truck transport of the removed material. Most identified development projects in Marin County are far enough from Bolinas Lagoon so that cumulative noise impacts would not occur.

Estuarine Alternative

Cumulative impacts for this alternative are identical to those of the Riparian Alternative.

No Action Alternative

There would be no air quality impacts from the project as result of the No Action Alternative; therefore there would be no cumulative air quality impacts.

5.3.12 Aesthetics and Visual Resources***Riparian Alternative***

The stream restoration and watershed enhancement projects are likely to result in positive visual impacts on the project area because they would protect and enhance the natural environment. The pond fencing project might result in a minor permanent impact on visual resources, depending on the type and location of the fence, as well as short-term impacts from project construction. These projects would result in minor cumulative impacts on the visual environment of Bolinas Lagoon.

Estuarine Alternative

The stream restoration and watershed enhancement projects are likely to result in positive visual impacts on the project area because they would protect and enhance the natural environment. The pond fencing project might result in a minor permanent impact on visual resources, depending on the type and location of the fence, as well as short-term impacts from project construction. These projects would result in minor cumulative impacts on the visual environment of Bolinas Lagoon.

No Action Alternative

The No Action Alternative is not expected to contribute to cumulative impacts on visual resources in the project area.

5.3.13 Public Services and Utilities***Riparian Alternative***

The projects most likely to result in impacts on public services and utilities are primarily planned for other areas of west Marin, particularly Point Reyes Station and areas around Tomales Bay, although the Point Reyes Seashore Lodge is not far from the project area. These small projects would expand in a minor way the need for public services in west Marin, particularly utilities (power and water) and public safety services required by new residences and businesses. Because the Riparian Alternative is expected to produce only a less than significant impact resulting from possible interference with a water line in Stinson Beach, this alternative would not result in a cumulatively significant impact on public services or utilities in the project area.

Estuarine Alternative

The projects most likely to result in impacts on public services and utilities are primarily planned for other areas of west Marin, particularly Point Reyes Station and areas around Tomales Bay, although the Point Reyes Seashore Lodge is not far from the project area. These small projects would expand in a minor way the need for public services in west Marin, particularly utilities (power and water) and public safety

services required by new residences and businesses. Because the Estuarine Alternative is expected to produce only a less than significant impact resulting from possible interference with a water line in Stinson Beach, this alternative would not result in a cumulatively significant impact on public services or utilities in the project area.

No Action Alternative

Under the No Action Alternative, lake levels could increase and Highway 1 could flood. If this were to occur, this could result in increased demand for utility and public services in the area to protect human life and property. Increased flooding may necessitate increased demand for police and fire protection along Highway 1. Flooding would also likely result in increased levels of maintenance necessary for utilities to maintain water and power in the area. If inclement weather conditions resulted in increased service requirements along Highway 1 at any of the proposed developments described above, the No Action Alternative could contribute to cumulative effects to public services and utilities in the area.

5.3.14 Socioeconomics

Riparian Alternative

The cumulative projects listed above would result in minor increases in local population and local employment and would therefore result in less than significant impacts on socioeconomic conditions in west Marin. These impacts would occur independently of the less than significant socioeconomic impacts of the Riparian Alternative and would not result in cumulatively significant impacts within the project area.

Estuarine Alternative

The cumulative projects listed above would result in minor increases in local population and local employment and would therefore result in less than significant impacts on socioeconomic conditions in west Marin. These impacts would occur independently of the less than significant socioeconomic impacts of the Estuarine Alternative and would not result in cumulatively significant impacts within the project area.

No Action Alternative

The No Action Alternative is not expected to contribute to cumulative socioeconomic impacts in the project area.