

residential lots with their fertilized and pesticide-treated lawns, sewer lines and sewer lift stations with their leaks and overflows, pets and recreational livestock with their barnyard wastes can have serious cumulative impacts as the watershed builds out over time.

Some of the pollutants commonly associated with runoff from developed areas are coliform bacteria; sediment; oxygen depleting factors (BOD and COD); biostimulants (Nitrogen and Phosphorus); hydrocarbons (such as oils, greases and other petrochemicals); toxic metals (such as arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc); occasionally a class of exotic, toxic petroleum-based carcinogens, called Polynuclear Aromatic Hydrocarbons, which are often associated with such simple household activities as irresponsible disposal of crankcase oil; and finally other miscellaneous "household" chemicals including but not limited to solvents, degreasers, and pesticides. These are all detrimental to domestic uses.

Currently, recreational use of the Lake is very high. However, such use can be managed as water quality protection needs dictate, and such use is reversible. For instance, recreation can be curtailed when water volumes in the Lake are low, and should recreation-sourced pollutants interfere with the Lake's more vital role as a water supply, recreation could be permanently terminated, though this is unlikely.

Permanent land-based projects on the other hand are not manageable and are not reversible. Once built, they are there to stay. Therefore, allowed development within the Folsom Lake Watershed must be carefully conceived and its pollutant effects watched.

Water quality protection strategies and programs discussed elsewhere in this Plan apply equally to the Folsom Lake Watershed. In addition, the following measures must also be implemented whenever development occurs within the Watershed.

Folsom Lake Watershed Development Guidelines - Implementation Measures

- (a) Commercial developments should be prohibited within the Folsom Lake Watershed.

Responsible Agency/Department: Planning Department

Time Frame: As part of adoption of the Horseshoe Bar/Penryn Community Plan

Funding: General Fund

- (b) Wherever possible, residential development densities should be transferred from the Folsom Lake Watershed into a less sensitive watershed (i.e. Miners Ravine), through utilization of the Planned Unit Development concept.

Responsible Agency/Department: Planning Department

Time Frame: On-going

Funding: Permit Fees

- (c) Where transfers outside the Folsom Lake Watershed are not possible due to limited ownership and other factors, the larger lot sizes of the Plan range should be utilized.

Responsible Agency/Department: Planning Department

Time Frame: On-going

Funding: Permit Fees

Where proposed residential development cannot be relocated outside the watershed, the following measures should be implemented to reduce as much as possible the adverse effects of its pollutants:

- (d) Wherever possible, require roads and sewers to be located outside the Folsom Lake Watershed.

Responsible Agency/Department: Land Development Departments

Time Frame: On-going

Funding: Permit Fees

- (e) Within the Folsom Lake Watershed, require the establishment of water quality management programs within each new project to measure (monitor) and to minimize pollutant impacts.

Responsible Agency/Department: Environmental Health Division

Time Frame: On-going

Funding: Permit Fees

- (f) Where structures, roads, sewer lines, and other improvements are allowed within the Folsom Lake Watershed, require the use of grassy buffers, sedimentation and bio-assimilation ponds, and other "Best Management Practices" to mitigate water quality impacts.

Require that grassy buffers be maintained by a responsible entity, and be required wherever feasible for the treatment of runoff waters from homes, roadways, driveways, and parking areas. These buffers are to be an enhancement to the natural open space water quality buffers and not a substitute for these natural open spaces.

Responsible Agency/Department: Land Development Departments

Time Frame: On-going

Funding: Permit Fees

- (g) Within the Folsom Lake Watershed, greater setbacks may be required where there are steep slopes, highly erosive soils, or other factors which may increase the likelihood of development adversely affecting the quality of water in Folsom Lake. The Division of Environmental Health shall develop criteria to be used to determine when such greater setbacks are appropriate.

Responsible Agency/Department: Environmental Health Division

Time Frame: On-going

Funding: General Fund

- (h) Within the Folsom Lake Watershed, allow septic systems only on parcels of 4.6 acres and larger where there is no possibility of extending sewers to serve.

Responsible Agency/Department: Environmental Health Division

Time Frame: On-going

Funding: Permit Fees

- (i) In order to soften the impacts of more dense development upon the most vulnerable parts of the Folsom Lake Watershed, require that those lots closest to the Folsom public property line and the lots adjacent to natural preservation easements be sized toward the largest acreage identified in the general plan designation rather than to the minimum lot size allowable under the zoning. This approach shall also apply in Planned Unit Developments.

Responsible Agency/Department: Planning Department

Time Frame: On-going

Funding: Permit Fees

(2) **STREAMS AS WATERSHEDS AND SURFACE WATER QUALITY PROTECTION**

Waters in the Plan area's streams are generally of high quality. However, these streams' watersheds are receiving considerable "pressure" from pollutants resulting from existing and planned land uses. These surface waters will provide some recharge to the groundwaters of the areas they traverse, and they may also serve as resources for use directly in irrigation. After reaching the American and Sacramento Rivers, they are available for domestic purposes. Protection of these surface waterways is, therefore, important for the long-term availability of water resources.

Undisturbed land and vegetation in natural open space has the ability to at least partially "purify" waters falling upon and traversing over it. The diversity of microscopic organisms, grasses and other plants, and trees found in undisturbed natural areas are the very foundation of a healthy watershed. Therefore, the riparian corridors where water-loving trees and shrubs predominate deserve preservation for the purposes of water quality protection.

Healthy natural upland vegetation also serves in the hydrologic cycle as a purifier of runoff waters.

The sites where land developments and riparian areas coincide are interfaces. Interfaces are points of weakness or stress.

Using an example from another land use planning concern, interfaces are places where conflicts are likely to occur between widely differing uses. For instance, where heavy industry would front upon medium density residential uses, one could expect the light, noise, dust, odors, chemicals, heavy vehicles, and scenic "interference" of the industrial uses to adversely affect the suitability of the residential environment. To alleviate some of the conflict, reducing the intensity of the industrial use or locating it farther away from the residential use would be beneficial.

To reduce the disruptive influences of residential land uses at their interface with the fragile riparian corridors and to provide some remaining natural upland watershed area adjacent to these riparian corridors where water quality protection can best be served, buffers should be established adjacent to natural riparian corridor areas. In addition, at these interfaces larger lot sizes should be strongly encouraged.

Where chemicals are handled in quantity, the potential adverse impacts to water quality increase dramatically. Therefore, care must be taken in the siting, design, and spill containment provisions of commercial uses in the Plan area. In addition, assurances must be

made that the chemicals and fuels involved with heavy construction equipment during all projects' construction phases are not allowed to enter surface waters.

Water quality degradation from stormwater runoff is primarily the result of runoff carrying pollutants from the land surface (i.e. streets, parking lots, pastures) to the receiving waters (i.e. streams and lakes). This type of pollutant is called "non-point source" pollution due to the fact that the pollutants are typically spread out over the land surface area (as opposed to point source pollution which refers to a specific managed source of pollution such as an industrial or wastewater treatment plant outfall to a stream). Non-point source pollution is of specific concern in the Horseshoe Bar/Penryn Community Plan area not only because of the potential impacts on streams and the several canals that run through the area, but also because of potential impacts on Folsom Lake.

Best Management Practices (BMPs) can be effective methods in removing pollutants from storm water runoff (i.e. oil grit separators, detention ponds) as well as controlling pollutants at the source (i.e. street cleaning, public education).

In order to provide water quality protection of the streams and canals in the area, all new developments shall be required to implement appropriate BMPs such that the net increase in pollutant loads from the development is minimized. Such practices may include, but are not limited to, the use of artificial wetlands, infiltration/sedimentation basins, riparian setbacks, oil/grit separators, or other effective means, where appropriate. Guidelines for selection of appropriate BMPs are presented in the California State BMP Handbook, and many other published sources.

No program of land use management for water quality protection can be complete without a monitoring component. It is imperative that the success of the land use strategies be confirmed -- and in cases where these efforts may have become ineffective, early warning is essential -- in order that appropriate reinforcement or re-direction can occur.

For this reason, the Environmental Health Division shall actively pursue all possible mechanisms, such as the CSA, through which to conduct a surface water monitoring program along the Plan area's waterways as part of each new land development project's mitigation monitoring program. Such water quality monitoring programs should be conducted throughout the life of the Plan to provide base line data and scientific support for the next update of the Community Plan's goals, policies, and programs.

Therefore, the following implementation measures are established:

- (a) Require all developments where fuels, solvents, and other potentially polluting chemicals will be handled in one or more of the ongoing functions of the project to provide appropriate spill containment structures.

Responsible Agency/Department: Environmental Health Division

Time Frame: On-going

Funding: Permit Fees

- (b) Require all developments to submit, as may be appropriate, plans and information to the Environmental Health Division's Hazardous Materials Section, and to obtain the necessary approvals for the safe handling of hazardous materials and wastes during construction.

Responsible Agency/Department: Environmental Health
Time Frame: On-going
Funding: Permit Fees

- (c) Require a minimum 100' non-development setback from the centerline of perennial streams, and a minimum 50' setback from intermittent streams (see Exhibit E) as part of permanent protection easements. Said setback areas shall be increased if necessary, to include the future, fully developed 100-year floodplain and all streamside riparian vegetation.

Responsible Agency/Department: Planning Department
Time Frame: On-going
Funding: Permit Fees

- (d) In subdivisions and Planned Unit Developments, encourage lots that are developed adjacent to streams be sized toward the largest acreage identified in the zoning or general plan designation rather than to the minimum lot size allowable.

Responsible Agency/Department: Planning Department
Time Frame: On-going
Funding: Permit Fees

- (e) The Environmental Health Division shall through the mitigation monitoring programs for all developments located entirely or in part within the Folsom Lake Watershed, require these developments to monitor the quality of stormwaters leaving the development.

Responsible Agency/Department: Environmental Health
Time Frame: On-going
Funding: Permit Fees

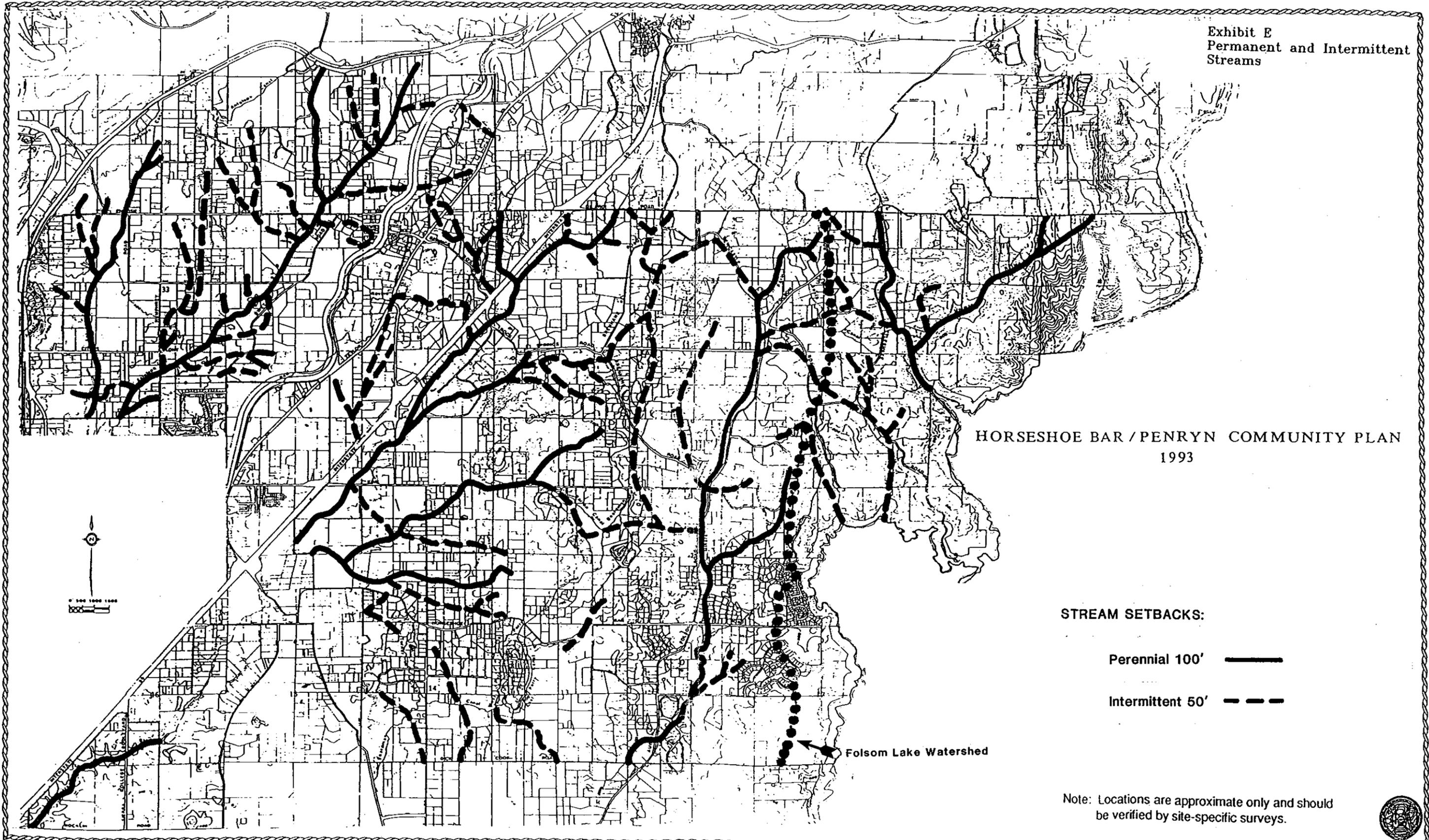
- (f) Where possible, require that each land subdivision which discharges stormwaters to Folsom Lake, Secret Ravine, Miners Ravine, Antelope Creek, or Mormon Ravine be included in a CSA Zone of Benefit which provides water quality monitoring onsite and a contribution of funds toward area-wide water quality monitoring, sampling, mapping, modeling and study.

Responsible Agency/Department: Land Development Departments
Time Frame: On-going
Funding: Permit Fees

- (g) Establish a mapping and data base system for storm water quality monitoring results and for water quality monitoring results obtained in Folsom Lake, Secret Ravine, Miners Ravine, Antelope Creek, and Mormon Ravine.

Responsible Agency/Department: Environmental Health
Time Frame: On-going
Funding: Permit Fees

Exhibit E
Permanent and Intermittent
Streams



HORSESHOE BAR / PENRYN COMMUNITY PLAN
1993

STREAM SETBACKS:

Perennial 100' 

Intermittent 50' 

Folsom Lake Watershed

Note: Locations are approximate only and should
be verified by site-specific surveys.



(3) GROUNDWATER EVALUATION AND PROTECTION

Groundwaters can be inexpensive and reliable sources of water to serve individual homesites. Contrary to popular belief, however, the earth does not filter out soluble pollutants before waters from the surface enter into the groundwater regime. And even in areas where treated water is provided, if the groundwater is subjected to pollution at that location, groundwater users at a different location down gradient can be adversely affected. It is imperative, therefore, to insure that pollutants allowed to be discharged both underground and to the ground's surface are minimized.

Septic systems are the sources of groundwater pollution that come to mind most frequently. The discharges from leachfields and other onsite sewage treatment and disposal systems contain such pollutants as nitrates, phosphates, salts, bacteria and viruses, and a wide array of household chemicals, degreasers, and solvents which may be toxic to carcinogenic.

Onsite sewage systems do not effectively remove many pollutants, particularly those which are very soluble (notably nitrates and salts), and those which few if any natural organisms can assimilate including solvents such as paint thinners and degreasers, crankcase oils, and the "exotic" household products. These serious water quality pollutants can only be diluted in the normal hydrologic cycle to whatever extent nature is capable of providing. Obviously precipitation amounts and surface percolation rates limit this dilution capability.

The groundwater found in the Plan area is utilized heavily as a source of domestic water. Fortunately it is still apparently of fairly high quality in most areas. However, in the adjacent Shirland Tract area (Auburn/Bowman Community Plan), unacceptable nitrate levels have now been encountered in the ground waters to approximately 100 feet in depth below one subdivision. In addition, in one area along Auburn Folsom Road between Rock Springs Road and Robin Lane the groundwater below a subdivision has shown marginal suitability for domestic use due to nitrates and other chemical contaminants.

The Placer County Environmental Health Division does not currently have a scientific and methodological approach to monitoring the quality or quantity of groundwater. As a result, there is not an adequate database to make specific findings regarding groundwater's bacteriological and chemical quality indicators. Inadequate well monitoring also prohibits analysis of any potential correlation between geologic formation and safe water yield.

In order to assure an adequate supply of potable groundwater, it is therefore important that meaningful study of the usable groundwater be established within each new development within this Plan area.

Through such study, problems can be identified and dealt with, and serious degradation of groundwaters in areas not now experiencing pollution may be prevented.

The Environmental Health Division should actively pursue mechanisms through which groundwater quality monitoring and appropriate protection will be effected. Monitoring programs should determine background data for chemical and bacteriological quality, including sampling for coliform bacteria, nitrates, manganese, iron, chlorides, phosphates, and petrochemicals. Well water level drawdown and static level monitoring should also be included.

The Environmental Health Division shall utilize the Area Advisory Councils as a focal point for development of appropriate groundwater quantity and quality study and monitoring programs and activities. Other concerned organizations such as the California Groundwater Association (water well drilling contractors) shall also be brought into the process, which should be based upon consensus and cooperation among such experts and affected persons in the community.

Monitoring these programs should include an assessment of the need to establish specified monitoring wells within new subdivisions as well as identifying monitoring well sites in specific geologic formations. Such monitoring wells would be for identifying and mapping of trends and problems with yield and quality indicators.

The following measures should be implemented within the Plan area:

- (a) Require that all land subdivisions of 10 or more lots utilizing onsite sewage systems be included in a CSA Zone of Benefit which provides for the inspection of septic system maintenance, operation, and pumping and which provides monitoring for impacts of such systems upon groundwaters.

Responsible Agency/Department: Environmental Health

Time Frame: On-going

Funding: Permit Fees

- (b) On-site sewage treatment and disposal shall be permitted on parcels where all current regulations can be met and where parcels have the area, soils, and other characteristics that permit such disposal facilities without threatening surface or groundwater quality or posing any other health hazards.

Responsible Agency/Department: Environmental Health

Time Frame: On-going

Funding: General Fund/Permit Fees

- (c) Require that each land subdivision which utilizes individual wells for domestic water supply be included in a CSA Zone of Benefit which provides groundwater monitoring onsite and a contribution of funds toward area-wide groundwater monitoring, sampling, mapping, modeling and study.

Responsible Agency/Department: Environmental Health

Time Frame: On-going

Funding: Permit Fees

- (d) Environmental Health Division should actively pursue the establishment of a mapping and data base system, beginning with the nucleus of a CSA within each new development, for groundwater monitoring results throughout the Plan area.

Responsible Agency/Department: Environmental Health

Time Frame: On-going

Funding: General Fund

- (e) Environmental Health Division should develop a program of modeling for groundwater quality and quantity as appropriate in light of testing and monitoring results.

Responsible Agency/Department: Environmental Health

Time Frame: On-going

Funding: General Fund

(4) CANALS AND THEIR PROTECTION

A surface water body category which cannot be overlooked is the canal system which conveys untreated water for irrigation and as a raw water resource for domestic water treatment plants. The canals are vulnerable to degradation because they are open to the atmosphere and are oriented along topographic contours which intersect existing as well as newly created stormwater flows. They are, therefore, deserving of special attention to protect the important water resource which they convey.

In instances where the Placer County Water Agency finds that canal protection is necessary because of impacts caused by new development, the following measures (or more stringent protections as determined by the Agency) should be appropriately implemented:

- Canals should be encased or otherwise protected wherever they are subject to the threat of pollution from runoff.
- No development uphill of an open canal should be allowed to let storm drainage enter a canal through a storm drainage collection system. Exceptions may be permitted based upon established legal rights to discharge.
- Canals should be fenced to prevent unauthorized access which leads to such abuses as illegal dumping of refuse, oils and chemicals.

Generally, the following measures should be sufficient to implement appropriate canal protections:

- (a) Require, whenever feasible, that domestic water supply canals be encased or otherwise protected from contamination wherever they pass through developments with lot sizes of 2.3 acres or less; where subdivision roads are constructed within 100 feet upslope or upstream from canals; and within all commercial, industrial, institutional, and multi-family developments.

Responsible Agency/Department: Department of Public Works/Division of Environmental Health

Time Frame: On-going

Funding: Plan Review Fees

- (b) Require fencing of domestic water supply canals wherever they pass through development with lot sizes ranging between 2.3 acre and 4.6 acres; and on a case-by-case basis as determined by the entity responsible for the canal. This fencing shall be installed inside the project property line, and the proponents or subsequent landowner shall be responsible for fence maintenance. Said fencing shall be designed to impede pedestrian trespass of the canal area and to impede any dumping of materials into the canal.

Responsible Agency/Department: Department of Public Works/Division of Environmental Health

Time Frame: On-going

Funding: Plan Review Fees

- (c) Require that each new development project potentially affecting a domestic water supply canal to provide proper protection to that canal as part of the DRC review of the project. Require that DRC coordinate its requirements with the entity responsible for the canal.

Responsible Agency/Department: Department of Public Works/Division of Environmental Health

Time Frame: On-going

Funding: Permit Fees

4. Vegetation

a. GOALS

- (1) PRESERVE OUTSTANDING AREAS OF NATIVE VEGETATION AND TREES, NATURAL TOPOGRAPHIC FEATURES, WILDLIFE HABITATS AND CORRIDORS, AND RIPARIAN CORRIDORS.
- (2) CONSERVE SIGNIFICANT GRASSLAND AND WOODED AREAS AS ESSENTIAL ECONOMIC, NATURAL, AND AESTHETIC RESOURCES.
- (3) PROTECT, RESTORE, AND ENHANCE THREATENED AND ENDANGERED SPECIES AND THE HABITAT WHICH SUPPORTS THOSE SPECIES.

b. POLICIES

- (1) Preserve in their natural conditions stream environment zones, including floodplains and riparian vegetation along creeks and canals.
- (2) The natural resources and features of a site proposed for development shall be the predominant planning factor that determines the scope and magnitude of the development. Conservation of the natural landscape, including minimizing disturbance to natural terrain and vegetation, shall be an overriding consideration in the design of any land development project, paying particular attention to its protection and the preservation of existing native vegetation.
- (3) Site specific surveys by qualified professionals shall be required prior to development to delineate wetlands in the Plan area. All development proposals involving wetlands shall be coordinated with the California Department of Fish and Game, Army Corps of Engineers and U.S. Fish and Wildlife Service. The "no-net-loss" policy (2: 1 replacement) of requiring