TRPA
APC
PACKETS

JUNE
1991
TAHOE REGIONAL PLANNING AGENCY
ADVISORY PLANNING COMMISSION

NOTICE IS HEREBY GIVEN that the Advisory Planning Commission of the Tahoe Regional Planning Agency will conduct its regular meeting at 9:30 a.m. on June 12, 1991, at the Tahoe Sands Inn Conference Center, 3600 Highway 50, South Lake Tahoe, California. The agenda for said meeting is attached hereto and made a part of this notice.

June 3, 1991

[Signature]
David S. Ziegler
Executive Director

This agenda has been posted at the TRPA office and at the following post offices: Zephyr Cove and Stateline, Nevada, and Al Tahoe and Tahoe Valley, California.
TAHOE REGIONAL PLANNING AGENCY
ADVISORY PLANNING COMMISSION

Tahoe Sands Inn Conference Center
3600 Highway 50, South Lake Tahoe, California

June 12, 1991
9:30 a.m.

All items on this agenda are action items unless otherwise noted.

AGENDA

I CALL TO ORDER AND DETERMINATION OF QUORUM

II APPROVAL OF AGENDA

III DISPOSITION OF MINUTES

IV PUBLIC HEARING AND RECOMMENDATION

A. Amendment of the Regional Plan Official Maps Relative to a Pierhead Line Adjustment (Map C-10) 1 - 7

B. Amendment of the Marina Master Plan Guidelines to Add Definition of Marina Expansion 8

C. Adoption of the Tahoe City Community Plan 9 - 10

D. Adoption of Plan Area Statement Amendments in Conformance With the Proposed Placer County General Plan Update 11 - 69

E. Man-Modified Designation for APNs 94-190-26 and -22, Placer County 70 - 150

F. Adoption of the Revised Stream Environment Zone/Land Capability Map Overlay (C-7) for the Tahoe City Area 151 - 181

G. Amendments to the 208 Plan Stream Environment Zone Restoration Program 182 - 187

V REPORTS

A. Executive Director

B. Legal Counsel

C. APC Members

D. Public Interest Comments

VI PENDING MATTERS

VII ADJOURNMENT
MEMORANDUM

June 3, 1991

To: Advisory Planning Commission

From: Agency Staff

Subject: Amendment of the Regional Plan Official Maps Relative to a Pierhead Line Adjustment (Map C-10)

PROPOSED ACTION: The proposed action is to amend the Regional Plan by amending the official map, Pierhead Line Aerial Photographs C-10, to change the adopted Pierhead line. Dr. Tim Martin, the owner of APN 85-202-02, has requested the pierhead line adjustment as depicted on Attachment 1. Martin - Pierhead Line Amendment. The proposed pierhead line adjustment is site specific.

BACKGROUND: The location of the proposed pierhead line adjustment is just south of the mouth of Blackwood Creek. A delta of sand and gravel has built up over the years at the creek mouth. The major source of the deposit was probably erosion in Blackwood Canyon. Some of the material was deposited in the area by littoral transport from the south, which according to Osborne, et al (1985) is the dominant transport direction (see Attachment 2).

The deposition was aggravated by a boathouse built on rock cribbing located directly in the mouth of Blackwood Creek. (The boathouse is circled on Attachment 1). The cribbing essentially dammed the outflow of material from the creek. The cribbing also blocked normal littoral transport and redistribution of material along the shoreline. The aerial photo (Attachment 3) was taken on October 27, 1977, a drought year. The water level on that day was 6221.76, within a foot of the Lake level now. In the photograph, the delta looks quite similar to the conditions this year. This is not a problem that has occurred just recently, however, the physical situation that resulted in the siltation has changed within the last three years.

The boathouse and rock cribbing have been removed, leaving only the piling supported section of the pier. A significant amount of erosion control work and stabilization has been carried out in recent years by the Forest Service in Blackwood Canyon, reducing the potential for future deposition at the mouth of Blackwood Creek.

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AGENDA ITEM IV.A.
the creek. Without the anchoring effect of the rock cribbing, wave action will change the configuration of the delta. There have been few severe storms since the rock cribbing was removed, and the Lake level has been down, so little or no material has moved yet. The delta is in a dynamic state relative to the pierhead line. It is not possible to predict when or how the configuration of the delta will reach equilibrium.

STAFF ANALYSIS

Issues:

From a planning point of view, there are two major issues that need to be considered:

1. Setting a Precedent: The proposed amendment could set the precedent for pierhead line amendments for all piers not having usable water depth now. During this period of low water, many piers are either completely high and dry or are over water so shallow that boating access is impaired.

2. Public Access to the Shorezone: The Threshold Study Report points out that there are small publicly owned littoral parcels where use is primarily limited to adjoining landowners and where access to the public may be limited by piers and adjacent development. This accurately describes the situation at Lakeside Park, the littoral parcel encompassing the two blocks south of Blackwood Creek, owned by Placer County (See Attachment 4).

The applicable Plan Area Statement, 161--Tahoe Pines, contains the special policy "Public access to the shoreline should be maintained or expanded on public lands, particularly on the county lands at Tahoe Pines." The Lakeside Park is at Tahoe Pines.

The aerial photo shows seven piers crossing Lakeside Park, one of which is a multiple use pier owned by a property owners' association. The presence of the piers across the park inhibits public use; it looks like a private beach. To walk along the beach, one must duck under or climb over the piers, except at very low water when it is possible to walk around some of the piers.

The policy statement adopted as the Recreation Threshold states in part, "In developing the Regional Plan, the staff and Governing Body shall consider provisions for additional access, where lawful and feasible, to the shorezone and high quality undeveloped areas for low density recreational uses." Amendment of the pierhead line which could allow extension of a pier at that location would further inhibit rather than promote public access where it is lawful and feasible and would invite other such amendments in the area, compounding the impact.

REQUIRED FINDINGS: The following is a list of the required findings as set forth in Chapter 6. In order to approve the proposed amendment to the Pierhead line map, there must be substantial evidence in the record to support the findings.
Chapter 6 Findings Necessary to Approve Map Amendments:

Section 6.4 Findings Necessary To Amend The Regional Plan, Including The Goals And Policies and Plan Area Statements and Maps: To approve any amendment to the Regional Plan, TRPA must find, in addition to the findings required pursuant to Subparagraphs 6.3.A(2) and 6.3.A(3) and Subsection 6.3.B, and in accordance with Sections 6.1 and 6.2, that the Regional Plan, as amended, achieves and maintains the thresholds.

The term project in the following section is taken to refer also to Regional Plan Amendments including the Goals and Policies, Plan Area Statements, and maps.

Section 6.3 Threshold-Related Findings: The following specific findings shall be made, pursuant to Articles V(c), V(g), and VI(b) of the Compact in addition to any other findings required by law.

6.3.A Findings Necessary To Approve Any Project: To approve any project, TRPA must find, in accordance with Sections 6.1 and 6.2, that:

(1) The project is consistent with and will not adversely affect implementation of the Regional Plan, including all applicable Goals and Policies, plan area statements and maps, the Code and other TRPA plans and programs.

(2) The project will not cause the environmental threshold carrying capacities thresholds to be exceeded; and

(3) Wherever Federal, State or local air and water quality standards applicable for the region, whichever are strictest, must be attained and maintained pursuant to Article V(d) of the Tahoe Regional Planning Compact, the project meets or exceeds such standards.

ENVIRONMENTAL DOCUMENTATION

Based on the Environmental Checklist and the Article V(g) Checklist, staff has determined that additional environmental documentation is necessary.

STAFF RECOMMENDATION

Based on the Environmental Checklist, the Article V(g) Findings, the review of the applicable thresholds and plan area statement, and the potential individual and cumulative impacts of this proposal, staff has determined that there is not sufficient evidence in the record to support the findings. Staff recommends denial of the proposed Pierhead Line Map amendment.

6/3/91

AGENDA ITEM IV.A.
MEMORANDUM

June 3, 1991

To: Advisory Planning Commission

From: Agency Staff

Subject: Amendment of the Marina Master Plan Guidelines to Add Definition of Marina Expansion

The Governing Board requested that the Marina Master Plan Guidelines committee reconvene to define what constitutes a marina expansion requiring the preparation of a marina master plan.

A meeting of the committee is scheduled for Thursday, June 6.

A committee report and a staff recommendation will be presented at the APC meeting for review, after which the APC will consider the matter for a recommendation to the Governing Board.

6/3/91

AGENDA ITEM IV B.
MEMORANDUM

June 3, 1991

To: Advisory Planning Commission

From: TRPA Staff

Subject: Adoption of the Tahoe City Community Plan

Proposed Action: The APC is requested to make a recommendation to the Governing Board in regard to the adoption of the Tahoe City Community Plan. The Planning Team recommended draft is enclosed in the APC packet.

Background: As directed by the APC, staff has prepared a final draft for APC review and recommendation. In taking action, the APC should consider the criteria and findings that the Governing Board must use.

In taking action on the plan, Chapter 14 requires the Governing Board to:

1. Consider all applicable factors, including consistency with the Goals and Policies, the Code, and the attainment of the targets and requirements of 14.6.B(1) of the Code, which include the level of environmental documentation, scope and scale of the community plan, and other requirements.

2. Consider the comments and recommendations of local government and public agencies.

3. Determine the effect, if any, on other plan areas considered in the study. [This is addressed in the EIS/EIR and in the proposed PAS amendment item on this agenda]

4. Make Section 14.3 findings for boundary adjustments. [The APC reviewed the findings in April and recommended they could be made]

Required Findings: Prior to amending the Regional Plan, the Governing Board must make the following findings pursuant to Chapter 6. Brief rationales on which the findings may be based are included.

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AGENDA ITEM IV.C.
Chapter 6 Findings

1. **Finding:** The project is consistent with, and will not adversely affect implementation of the Regional Plan, including all applicable Goals and Policies, Plan Area Statements and maps, the Code, and other TRPA plans and programs.

   **Rationale:** The EIS/EIR for the Community Plan indicates that the Plan is consistent with all TRPA plans, programs, and regulations.

2. **Finding:** The project will not cause environmental thresholds to be exceeded.

   **Rationale:** The Community Plan, because of the community plan target requirements, enhances the program of threshold attainment on a schedule consistent with the Regional Plan.

3. **Finding:** Wherever federal, state and local air and water quality standards applicable for the Region, whichever are strictest, must be attained and maintained pursuant to Article V(d) of the Compact, the project meets or exceeds such standards.

   **Rationale:** The EIS/EIR addresses the air and water quality impacts and mitigation. All impacts are mitigated and there is no standard violated.

4. **Finding:** The Regional Plan, as amended, achieves and maintains the thresholds.

   **Rationale:** Subsection 14.6.B(1) requires the Community Plan to set and achieve threshold targets consistent with the Code. The Conservation Element documents the air, water, scenic, SEZ, and other targets achieved by the Community Plan. The Community Plan target schedule is consistent with the Regional Plan schedule.

**Environmental Documentation:** The plan amendments have been addressed in the TRPA Community Plans EIS/EIR for Tahoe City and Lake Forest (1991). No significant unmitigated impacts are identified because changes or alterations have been required in the Plan which avoid or reduce the significant adverse effect identified in the EIS/EIR.

**Recommendation:** The Tahoe City Community Plan Team and the TRPA staff recommend the APC recommend approval of the Tahoe City Community Plan.

6/3/91
MEMORANDUM

June 3, 1991

To: Advisory Planning Commission

From: TRPA Staff

Subject: Adoption Of Plan Area Statement Amendments in Conformance With The Proposed Placer County General Plan Update

Proposed Action: The Advisory Planning Commission is requested to recommend to the Governing Board the appropriate action in regards to the adoption of amendments to PAS 001B, 002, 003, 004, 005, 006, 007, 008, 009A, 009B, 010, 011, 012, and 171. These amendments are related to the Placer County General Plan Update and the Tahoe City Community Plan. The adopting ordinance, text amendments, and map amendments are attached.

Background: In May the APC reviewed the proposed Placer County General Plan Update for the Tahoe City area. The APC directed staff to bring back the necessary PAS amendments needed to make the TRPA Plan and the Placer County Plan consistent.

The major issues resolved by these amendments are (1) the deletion of Lake Forest as a Community Plan, (2) the reserve status of the Tahoe City Industrial Community Plan, (3) the nondesignation of Dollar Hill as a Community Plan, and (4) consideration of Dollar Hill area for some public facilities.

Required Findings: Prior to amending the Regional Plan, the Governing Board must make the following findings pursuant to Chapter 6. Brief rationales on which the findings may be based are included.

1. Finding: The project is consistent with, and will not adversely affect implementation of the Regional Plan, including all applicable Goals and Policies, Plan Area Statements and maps, the Code, and other TRPA plans and programs.

Rationale: The coordinated Placer County-TRPA land use regulation will help implement the Regional Plan and resolve land use issues. There is no major change of land use or development potential proposed.

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AGENDA ITEM IV.D.
Memorandum to Advisory Planning Commission
Adoption Of Plan Area Statement Amendments in Conformance With The Proposed Placer County General Plan Update

2. Finding: The project will not cause environmental thresholds to be exceeded.
   Rationale: An EIS/EIR was prepared on the subject PAS amendments and it did not identify any significant adverse impacts including exceedances of thresholds.

3. Finding: Wherever federal, state and local air and water quality standards applicable for the Region, whichever are strictest, must be attained and maintained pursuant to Article V(d) of the Compact, the project meets or exceeds such standards.
   Rationale: An EIS/EIR was prepared for these PAS amendments and it did not identify any violations of standards.

4. Finding: The Regional Plan, as amended, achieves and maintains the thresholds.
   Rationale: The amendments generally coordinate local and regional planning. The EIS/EIR indicates the Community Plan and amended PASs will achieve thresholds.

Environmental Documentation: The plan amendments have been addressed in the TRPA Community Plans EIS/EIR for Tahoe City and Lake Forest (1991). No significant unmitigated impacts were identified.

Recommendation: The Tahoe City Planning Team and the TRPA staff recommend approval of the amended PASs.
TAHOE REGIONAL PLANNING AGENCY
ORDINANCE NO. 91-

AN ORDINANCE AMENDING ORDINANCE NO. 87-9, AS AMENDED, BY AMENDING THE REGIONAL PLAN OF THE TAHOE REGIONAL PLANNING AGENCY, AS AMENDED, BY AMENDING PLAN AREA STATEMENTS 001B, 002, 003, 004, 005, 006, 007, 008, 009A, 009B, 010, 011, 012, and 171 TO MAKE THEM CONSISTENT WITH THE PLACER COUNTY GENERAL PLAN UPDATE FOR THE TAHOE CITY AREA; AND PROVIDING FOR OTHER MATTERS PROPERLY RELATED THERETO.

The Governing Board of the Tahoe Regional Planning Agency does ordain as follows:

Section 1.00  Findings

1.10  It is necessary and desirable to amend Ordinance 87-9, as amended, relating to the Regional Plan of TRPA, by amending Plan Area Statements 001B, 002, 003, 004, 005, 006, 007, 008, 009A, 009B, 010, 011, 012, and 171 to make them consistent with the Placer County General Plan Update for the Tahoe City area in order to further implement the Regional Plan pursuant to Article VII(a) and other applicable provisions of the Tahoe Regional Planning Compact.

1.20  These amendments have been analyzed the TRPA Community Plans EIS/EIR for Tahoe City and Lake Forest (1991) and have been determined not to have a significant effect on the environment.

1.30  The Advisory Planning Commission (APC) conducted a noticed public hearing on these amendments and recommended adoption of the amendments. The Governing Board also conducted a noticed public hearing at which oral and documentary testimony were received and considered by the Board.

1.40  The Governing Board, prior to adoption of this ordinance, made the findings required by Section 6.4 of the TRPA Code of Ordinances and Article V(g) of the Compact. The Board finds that such findings are supported by substantial evidence in the record.

1.50  The Governing Board finds that the amendments adopted hereby continue to implement the Regional Plan, as amended, in a manner that achieves and maintains the adopted environmental threshold carrying capacities as required by Article V(c) of the Compact.

1.60  Each of the foregoing findings is supported by substantial evidence in the record.
Section 2.00 Amendment of Plan Area Statements 085, 089B, 091, 092, and 093

Subsection 6.10(2) of TRPA Ordinance 87-9, as amended, is hereby further amended to add subparagraph (s) as follows:

"6.10 Plan Documents

Amended (2) Plan Area Statements for Plan Areas 001A through 175, inclusive, which statements are set forth in the document entitled, Regional Plan for the Lake Tahoe Basin, Plan Area Statements: Carson City, City of South Lake Tahoe, Douglas County, Placer County, Washoe County, Tahoe Regional Planning Agency, January 7, 1987, including the amendments to the Plan Area Statements as set forth in:

(a) "EXHIBIT A" entitled Plan Area Statement Amendments, February 25, 1987, which amendments shall be incorporated in the Plan Area Document, dated January 7, 1987, referred to in this subsection; and

(b) "EXHIBIT B" entitled Plan Area Statement Amendments, May 17, 1987, which amendments shall be incorporated in the Plan Area Document, dated January 7, 1987, referred to in this subsection; and

(c) "EXHIBIT C" entitled Plan Area Statement Amendments, March 14, 1988, which amendments shall be incorporated in the Plan Area Document, dated January 7, 1987, referred to in this subsection; and

(d) "EXHIBIT D", entitled Plan Area Statement Amendments, August 3, 1988, which amendments shall be incorporated into the Plan Area Document, dated January 7, 1987 referred to in this subsection; and

(e) "EXHIBIT D", entitled Plan Area Statement Amendments, October 27, 1988, which amendments shall be incorporated in the Plan Area Document, dated January 7, 1987, referred to in this subsection; and

(f) "EXHIBIT E", entitled Plan Area Statement Amendments, November 30, 1988, which amendments shall be incorporated in the Plan Area Document dated January 7, 1987, referred to in this subsection; and
(g) "EXHIBIT P", entitled Plan Area Statements and Maps Amendments, November 15, 1988, which amendments shall be incorporated in the Plan Area Document, dated January 7, 1987, referred to in this ordinance; and


(k) "EXHIBIT K", entitled Bijou Park Plan Area Statement Amendments, June 20, 1989, which amendments shall be incorporated into the Plan Area Document dated January 7, 1987, referred to in this ordinance.


(m) "EXHIBIT M", entitled PAS 170, General List Amendments, November 15, 1989, which amendments shall be incorporated into the Plan Area Document dated January 7, 1987, referred to in this ordinance.

(n) "EXHIBIT N", entitled Forest Service Lands Plan Area Statement Amendments, December 8, 1989, which amendments shall be incorporated into the Plan Area Document dated January 7, 1987, referred to in this ordinance.

(o) "EXHIBIT O", entitled Plan Area 001A and 003 Amendments, December 8, 1989, which amendments shall be incorporated into the Plan Area document dated January 7, 1987, referred to in this ordinance.

(q) "EXHIBIT Q", entitled Montreal Road Special Policy, June 18, 1990, which amendments shall be incorporated into the Plan Area Document dated January 7, 1987, referred to in this ordinance.

(r) "EXHIBIT R" Amendment of Plan Area Statement 082, Upper Kingsbury, by the deletion of food and beverage retail sales as a permissible use and the addition of professional offices to the General List as a special use.

(s) "EXHIBIT S" entitled Tahoe City Plan Area Amendments, July 1991 which amendments shall be incorporated into the Plan Area Document dated January 7, 1987, referred to in this ordinance.

Section 3.00 Interpretation and Severability

The provisions of this ordinance and the amendments to the Regional Plan Package adopted hereby shall be liberally construed to effect their purposes. If any section, clause, provision or portion thereof is declared unconstitutional or invalid by a court of competent jurisdiction, the remainder of this ordinance and the amendments to the Regional Plan Package shall not be affected thereby. For this purpose, the provisions of this ordinance and the amendments to the Regional Plan Package are hereby declared respectively severable.

Section 4.00 Effective Date

Pursuant to Subsection 13.7.B of the Code of Ordinances, the provisions of this ordinance shall be effective 60 days after its adoption.

PASSED and ADOPTED by the Governing Board of the Tahoe Regional Planning Agency at a regular meeting held __________________, 1991, by the following vote:

Ayes:

Nayes:

Abstentions:

Absent:

W. F. Cronk, Chairman
Tahoe Regional Planning Agency
EXHIBITS
TAHOE CITY PLAN AREA AMENDMENTS
JULY 1991

001B -- TAHOE CITY INDUSTRIAL

PLAN DESIGNATION:

Land Use Classification
COMMERCIAL/PUBLIC SERVICE

Management Strategy
MITIGATION

Special Designation
PRELIMINARY COMMUNITY PLAN AREA

TDR RECEIVING AREA FOR:

1. Existing Development

PREFERRED AFFORDABLE HOUSING AREA

DESCRIPTION:

Location: This Plan Area is located north of Tahoe City and is located on TRPA maps C-6 and C-7.

Existing Uses: This area contains the Tahoe City dump site. However the majority of the land is undeveloped and undisturbed. The dump site is approximately 25 percent of the area.

Existing Environment: The land capability classification for this area 55 percent low hazard, 35 percent high hazard, and 5 percent SEZ. Approximately one third of the high hazard land is the dumpsite. Overall, the site is 30 percent disturbed with dirt roads, the dump site and some minor structures.

PLANNING STATEMENT: This area should become the light industrial area for Tahoe City and the receiving area for the relocation of existing incompatible uses located in the Tahoe City area.

PLANNING CONSIDERATIONS:

1. The access from the central business district requires roadways through residential neighborhoods with steeper than desirable grades.

2. The dumpsite is not restored and abuts a stream channel.

3. This area may be a suitable location in which to relocate a trailer court that is being phased out on the 64 acre tract.

4. There is a need for a site to relocate incompatible industrial uses in the Tahoe City area.
SPECIAL POLICIES:

1. The 1975 TRPA/Placer County Urban Design Plan shall be used as a guideline for future planning considerations with appropriate revisions to bring the design plan up to date. This area was identified as a possible site for industrial and affordable housing. This policy applies to surrounding planning areas affected by the Urban Design Plan. The new Tahoe City Community Plan should reflect the goals of the 1975 Tahoe City Urban Design Plan, as updated.

2. Uses on the main highways should be primarily tourist-service in nature. This area is a preferred area for the location of uses not found to be compatible elsewhere in the Tahoe City area.

3. Before any development may take place in this Plan Area, a master plan shall be approved by the TRPA. The master plan shall address access, restoration of the dump site and SEZ, all necessary improvements, and sites for the relocation of incompatible uses found elsewhere in the area.

4. Placer County and the Tahoe City Advisory Council, in cooperation with TRPA, have commenced a general plan review of the areas included in Plan Areas 001A, 001B, 002, 003, 004, 005, 006, 007, 008, 009A, 009B, 010, 011, 012, 171, 172, 173, and 174. Until that general plan process has been completed the Plan Areas designated 001A, 001B, and 009A have been designated preliminary Community Plan areas. However, it is the intent of TRPA that an in-depth examination of the entire area be undertaken during the general plan process to determine the final areas that shall be subject to Community Plan incentives, and establish the final boundaries of Community Plan areas, as well as to develop other relevant planning considerations.

PERMISSIBLE USES: Pursuant to Chapter 18 PERMISSIBLE USES and if applicable, Chapter 51 PERMISSIBLE USES AND ACCESSORY STRUCTURES IN THE SHOREZONE AND LAKEZONE, the following primary uses may be permitted within all or a portion of the Plan Area. The list indicates if the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed shall be considered nonconforming uses within this Plan Area. The establishment of new uses not listed shall be prohibited within this Plan Area.

General List: The following list of permissible uses is applicable throughout the Plan Area.

Residential

Employee housing (S) (A); mobile home dwelling (S), and multiple family dwelling (S).

Commercial

Auto, mobile home and vehicle dealers (S); building materials and hardware (S) (A); mail order and vending (S); nursery (S), outdoor retail sales (S), service stations (A); privately owned assembly and entertainment (S); animal husbandry services (A); auto repair and service (S) (A); broadcasting studios (S); business support services (A); contract construction services (A); laundries and dry cleaning plant (A); repair services (A); sales lots (A); schools—business and vocational (S); secondary storage (A); batch plants (S); food and kindred products (A); fuel and ice dealers (S) (A); industrial services (S) (A); printing and publishing (A); recycling and scrap (S); small scale manufacturing (S); storage yards (A); vehicle and freight terminals (S) (A); vehicle storage and parking (S) (A); warehousing (S), and wholesale and distribution (A).
Public Service

Collection stations (S), government offices (S), local assembly and entertainment (S), local post office (S), local public health and safety facilities (S), publicly owned assembly and entertainment (S), public utility centers (A), regional public health and safety facilities (S), pipelines and power transmission (S), transit stations and terminals (S) (A), transportation routes (S), and transmission and receiving facilities (S) (A).

Resource Management

Reforestation (A), sanitation salvage cut (A), special cut (A), thinning (A), tree farms (A), early successional stage vegetation management (A), nonstructural fish habitat management (A), nonstructural wildlife habitat management (A), structural fish habitat management (A), structural wildlife habitat management (A), fire detection and suppression (A), fuels treatment (A), insect and disease suppression (A), sensitive plant management (A), uncommon plant community management (A), erosion control (A), SEZ restoration (A), and runoff control (A).

MAXIMUM DENSITIES: Pursuant to Chapter 21 DENSITY, the following list establishes the maximum allowable densities that may be permitted for any parcel located within the Plan Area. The actual development permitted may be further limited by transfer of development rights limitations, residential density incentive program, special use determinations, allocation limitations and general site development standards.

**USE**

**MAXIMUM DENSITY**

Residential

Multiple Family Dwelling 15 units per acre

Mobile Home Dwelling 8 units per acre

Employee Housing As per the limitations above

RESIDENTIAL BONUS UNITS: Pursuant to Chapter 35, the maximum number of residential bonus units which may be permitted for this Plan Area is 0 units.

MAXIMUM COMMUNITY NOISE EQUIVALENT LEVEL: The maximum community noise equivalent level for this Plan Area is 65 CNEL.

ADDITIONAL DEVELOPED OUTDOOR RECREATION: The following are the targets and limits for additional developed outdoor recreation facilities specified in Chapter 13 to be located within this Plan Area. Specific projects and their timing are addressed in the TRPA Five-Year Recreation Program pursuant to Chapter 33 Allocation of Development. The following additional capacities allowed are measured in persons at one time:

SUMMER DAY USES 0 PAOT  WINTER DAY USE 0 PAOT  OVERNIGHT USES 0 PAOT

IMPROVEMENT PROGRAMS: The capital improvement and other improvement programs required by the Regional Goals and Policies Plan for this area shall be implemented. The improvements include the following:

1. Improvements required by Volume IV of the Surface Water Quality Management Plan as shown on Figure VIII-1 through 18 of Volume I of the 208 Water Quality Plan.
2. The highway and transit improvements indicated in the Transportation Element of the Regional Goals and Policies Plan.

3. Stream zone restoration as indicated in the Volume III of the Water Quality Management Plan, Stream Environment Zone Restoration Program. (To be completed.)
002 -- FAIRWAY TRACT

PLAN DESIGNATION:

Land Use Classification:  RESIDENTIAL
Management Strategy:  MITIGATION
Special Designation:  TDR RECEIVING AREA FOR:

1. Multi-Residential Units (Special Area #1 only)

PREFERRED AFFORDABLE HOUSING AREA
MULTI-RESIDENTIAL INCENTIVE PROGRAM AREA
(Special Area #1 only)

DESCRIPTION:

Location: This Plan Area is located north of the Tahoe City commercial area and is found on TRPA map C-7.

Existing Uses: This low density residential area includes a golf course and an elementary school. Older, lower-cost homes are located in the flat area near the school. The area is 80 percent built out.

Existing Environment: The land capability classification of this area is 40 percent low hazard, 15 percent moderate hazard, 40 percent SEZ and 5 percent high hazard. The disturbance risk is high in the vicinity of the school and moderate in the hilly areas behind it. The land coverage is 10 percent with an additional 10 percent disturbed.

PLANNING STATEMENT: This area should continue to serve as a residential neighborhood, maintaining the existing character.

PLANNING CONSIDERATIONS:

1: The golf course uses a large amount of fertilizer within the SEZ.

2: Subdivision improvements within the planning area are not adequate with respect to drainage, infiltration and slope stabilization.

3: West Fairway Drive is of inadequate width.

SPECIAL POLICIES:

1. The golf course area should be continued as a buffer/open space area to the commercial development of Tahoe City.

2. The 1975 TRPA/Placer County Urban Design Plan shall be used as a guideline for future planning considerations with appropriate revisions to bring the Design Plan up to date. This policy applies to the surrounding Plan Areas affected by the Urban Design Plan. The new Tahoe
City Community Plan will be developed to reflect the goals of the 1975 Tahoe City Urban Design Plan, as updated:

3. TRPA will assist with a study of the entire area within Plan Areas 001A, 002 and adjacent Plan Areas to identify areas that are man-modified in accordance with Chapter 20 of the Code of Ordinances. The target date for completion of the study will be August 1, 1987. Areas recognized by the Agency as man-modified shall be regulated in accordance with the provisions of Chapter 20 of the Code of Ordinances.

4. Areas zoned for multiple residential use under pre-existing county zoning may be considered for such. (Special Area #1)

5. Placer County and the Tahoe City Advisory Council, in cooperation with TRPA, have commenced a general plan review of the areas included in Plan Areas 001A, 001B, 002, 003, 004, 005, 006, 007, 008, 009A, 009B, 010, 011, 012, 171, 172, 173 and 174. Until that general plan process has been completed the Plan Areas designated 001A, 001B, and 009A have been designated preliminary Community Plan areas. However, it is the intent of TRPA that an in-depth examination of the entire area be undertaken during the general plan process to determine the final areas that shall be subject to Community Plan incentives, and establish the final boundaries of Community Plan areas, as well as to develop other relevant planning considerations. Proposals for inclusion of any significant additional areas within Community Plan boundaries shall demonstrate compliance with the criteria for such inclusion set forth in the Code of Ordinances.

6. Man-modified SEZs should be evaluated and restored to the extent practical and consistent with the TRPA SEZ program. Where lands are found to be man-modified, the new capability designation shall supersede the SEZ designation.

PERMISSIBLE USES: Pursuant to Chapter 18 PERMISSIBLE USES and if applicable, Chapter 51 PERMISSIBLE USES AND ACCESSORY STRUCTURES IN THE SHOREZONE AND LAKEZONE, the following primary uses may be permitted within all or a portion of the Plan Area. The list indicates if the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed shall be considered nonconforming uses within this Plan Area. The establishment of new uses not listed shall be prohibited within this Plan Area.

General List: The following list of permissible uses is applicable throughout the Plan Area, except as noted in Special Area #1:

Residential

Single family dwelling (A).

Public Service

Cemeteries (A), churches (A)(S), cultural facilities (S), day care centers (S)(A), local post offices (S), local public health and safety facilities (S), membership organizations (A), publicly owned assembly and entertainment (S), public utility centers (A), schools - kindergarten through secondary (A), pipelines and power transmisions (S), transit stations and terminals (S), transportation routes (S), and transmission and receiving facilities (A)(S).

Recreation

Day use areas (A), golf courses (A)(S), participant sports facilities (S), cross country skiing courses (A), outdoor recreation concession (A), and snowmobile courses (S).
Resource Management

Reforestation (A), sanitation salvage cut (A), special cut (A), selection cut (S), thinning (A), early successional stage vegetation management (A), structural and nonstructural fish/wildlife habitat management (A), fire detection and suppression (A), fuels treatment/management (A), insect and disease suppression (A), sensitive and uncommon plant management (A), erosion control (A), SEZ restoration (A), and runoff control (A).

Special Area #1: The following list of permissible uses is applicable in Special Area #1.

All the uses listed on the General List plus the following additions:

Residential

Multiple family dwelling (A), nursing and personal care (A), employee housing (A), and residential care (A).

MAXIMUM DENSITIES: Pursuant to Chapter 21 DENSITY, the following list establishes the maximum allowable densities that may be permitted for any parcel located within the Plan Area. The actual development permitted may be further limited by transfer of development rights limitations, residential density incentive program, special use determinations, allocation limitations and general site development standards.

<table>
<thead>
<tr>
<th>USE</th>
<th>MAXIMUM DENSITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td></td>
</tr>
<tr>
<td>Single Family Dwelling</td>
<td>1 unit per parcel</td>
</tr>
<tr>
<td>Multiple Family Dwellings</td>
<td>8 units per acre (SA #1 only)</td>
</tr>
<tr>
<td>Nursing and Personal Care</td>
<td>25 persons per acre</td>
</tr>
<tr>
<td>Residential Care</td>
<td>25 persons per acre</td>
</tr>
<tr>
<td>Employee Housing</td>
<td>15 units per acre (SA #1 only)</td>
</tr>
</tbody>
</table>

RESIDENTIAL BONUS UNITS: Pursuant to Chapter 35, the maximum number of residential bonus units which may be permitted for this Plan Area is 45 units.

MAXIMUM COMMUNITY NOISE EQUIVALENT LEVEL: The maximum community noise equivalent level for this Plan Area is 55 CNEL.

ADDITIONAL DEVELOPED OUTDOOR RECREATION: The following are the targets and limits for additional developed outdoor recreation facilities specified in Chapter 13 to be located within this Plan Area. Specific projects and their timing are addressed in the TRPA Five-Year Recreation Program pursuant to Chapter 33 Allocation of Development. The following additional capacities allowed are measured in persons at one time:

SUMMER DAY USES 0 PAOT  WINTER DAY USE 0 PAOT  OVERNIGHT USES 0 PAOT

IMPROVEMENT PROGRAMS: The capital improvement and other improvement programs required by the Regional Goals and Policies Plan for this area shall be implemented. The improvements include, but are
not limited to, the following:

1. Improvements required by the Surface Volume IV of the Water Quality Management Plan, as shown on Figure VIII-1 through 18 of Volume I of the 208 Water Quality Plan.

2. The highway and transit improvements indicated in the Transportation Element of the Regional Goals and Policies Plan.

3. Stream zone restoration as indicated in Volume III of the Water Quality Management Plan, the Stream Environment Zone Restoration Program. (To be completed.)
003 -- LOWER TRUCKEE

PLAN DESIGNATION:

Land Use Classification  RECREATION
Management Strategy     REDIRECTION
Special Designation      SCENIC RESTORATION AREA

DESCRIPTION:

Location: This area is located within the canyon area of the Truckee River between Tahoe City and River Ranch and is depicted on the following Agency maps B-7, B-8, C-7, C-8 and the Tahoe City Quadrangle.

Existing Uses: Except for a few commercial and residential uses, this planning area is mostly undeveloped and in public ownership. The existing uses mostly occur in areas of poor land capability and along the highway corridor. Access to the areas not directly fronted by the highway is limited to unimproved roads. Recreational activities include river rafting, fishing, hiking, and biking. This highway corridor serves as a major visitor approach to Lake Tahoe.

Existing Environment: Most of the land in this area is classified as high hazard. The plant composition is dominated by mature stands of mixed conifer stands. The river and forested backdrop of the canyon combine to create a scenic entrance to the Basin.

PLANNING STATEMENT: This area should be managed for recreational uses that are compatible with the special scenic and resource values of the planning area. Existing developed facilities that contribute to scenic degradation in the area should be relocated to other suitable areas outside the planning area.

PLANNING CONSIDERATIONS:

1. Most of the residential and commercial facilities are located within high hazard lands and detract from the scenic quality of the highway corridor which is a designated Scenic Corridor.

2. Inadequate parking facilities along the highway contribute to visual and water quality problems.

3. The roadway leading into Tahoe City (Scenic Roadway Unit 42, 43) is targeted for scenic restoration according to the adopted threshold standards.

4. The capacity of the highway is exceeded during peak use periods.

5. Drainage in this Plan Area flows to the Truckee River and away from Lake Tahoe.

SPECIAL POLICIES:

1. **Redirect** Existing commercial uses out of this Plan Area should be encouraged to relocate to more appropriate Plan Areas. Incentives through TDRs to any receivable Plan Area should be provided to encourage commercial uses to relocate. Commercial uses that are allowed to remain for safety reasons should be required to show that there is no safe feasible alternative
site and should be required to do visual buffering or landscaping as conditions for any permits for additions, modifications, or alterations.

2. Provide suitable parking facilities for recreational users of the river.

3. Optimize recreation and travel use of the river corridor to that which maintains its attractiveness and environmental stability.

4. Provide opportunities for low to moderate resource management in the plateau area.

4. Public recreation opportunities on Lake Tahoe and the Truckee River should be encouraged. Prior to any expansion, the total number of rafts operating at one time on the Truckee River should be established by a comprehensive environmental analysis. This analysis should include, but not be limited to, determination of overall recreation needs, attractiveness of the facilities, environmental constraints and impacts, parking and traffic constraints, and various water flow limitations. Parking for commercial rafting should be provided by the businesses and in locations that do not further congest the "wye" area.

6. Placer County and the Tahoe City Advisory Council, in cooperation with TRPA, have commenced a general plan review of the areas included in Plan Areas 001A, 001B, 002, 003, 004, 005, 006, 007, 008, 009A, 009B, 010, 011, 012, 171, 172, 173 and 174. Until that general plan process has been completed the Plan Areas designated 001A, 001B, and 009A have been designated preliminary Community Plan areas. However, it is the intent of TRPA that an in-depth examination of the entire area be undertaken during the general plan process to determine the final areas that shall be subject to Community Plan incentives, and establish the final boundaries of Community Plan areas, as well as to develop other relevant planning considerations. Proposals for inclusion of any significant additional areas within Community Plan boundaries shall demonstrate compliance with the criteria for such inclusion set forth in the Code of Ordinances.

PERMISSIBLE USES: Pursuant to Chapter 18 PERMISSIBLE USES and if applicable, Chapter 51 PERMISSIBLE USES AND ACCESSORY STRUCTURES IN THE SHOREZONE AND LAKEZONE, the following primary uses may be permitted within all or a portion of the Plan Area. The list indicates if the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed shall be considered nonconforming uses within this Plan Area. The establishment of new uses not listed shall be prohibited within this Plan Area.

General List: The following list of permissible uses is applicable throughout the Plan Area.

Residential

   Single family dwelling (A) and summer homes (S).

Commercial

   Fuel and ice dealers (S).

Public Service

   Pipelines and power transmission (S), regional local public health and safety facilities (S), public utility centers (S), transportation routes (S), and transit stations and terminals (S).

Recreation

   Day use areas (A), riding and hiking trails (A), undeveloped campgrounds (A), outdoor recreation concessions (S), rural sports (S), visitor centers (S), and snowmobile courses (S).

Resource Management

   Reforestation (A), regeneration harvest (S), sanitation salvage cut (A), selection cut (A), special cut (A), thinning (A), tree farms (S), timber stand improvement (S), early successional stage vegetation.

PAS 003 -- LOWER TRUCKEE
Page 2
management (A), non-structural fish habitat management (A), non-structural wildlife habitat management (A), structural fish habitat management (A), structural wildlife habitat management (A), farm/ranch accessory structures (S), grazing (S), range pasture management (S), range improvement (S), fire detection and suppression (A), fuels treatment (A), insect and disease suppression (A), prescribed fire management (A), sensitive plant management (A), uncommon plant community management (A), erosion control (A), SEZ restoration (A), and run-off control (A).

**MAXIMUM DENSITIES:** Pursuant to Chapter 21 DENSITY, the following list establishes the maximum allowable densities that may be permitted for any parcel located within the Plan Area. The actual development permitted may be further limited by transfer of development rights limitations, residential density incentive program, special use determinations, allocation limitations and general site development standards.

<table>
<thead>
<tr>
<th>USE</th>
<th>MAXIMUM DENSITY</th>
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</thead>
<tbody>
<tr>
<td>Residential</td>
<td></td>
</tr>
<tr>
<td>Single Family Dwelling</td>
<td>1 unit per parcel</td>
</tr>
<tr>
<td>Summer House</td>
<td>1 unit per parcel or lease site</td>
</tr>
</tbody>
</table>

**RESIDENTIAL BONUS UNITS:** Pursuant to Chapter 35, the maximum number of residential bonus units which may be permitted for this Plan Area is 0 units.

**MAXIMUM COMMUNITY NOISE EQUIVALENT LEVEL:** The maximum community noise equivalent level for this Plan Area is 50 CNEL. The maximum community noise equivalent level for the Highway 89 corridor is 55 CNEL.

**ADDITIONAL DEVELOPED OUTDOOR RECREATION:** The following are the targets and limits for additional developed outdoor recreation facilities specified in Chapter 13 to be located within this Plan Area. Specific projects and their timing are addressed in the TRPA Five-Year Recreation Program pursuant to Chapter 33 Allocation of Development. The following additional capacities allowed are measured in persons at one time:

- **SUMMER DAY USES 0 PAOT**
- **WINTER DAY USE 0 PAOT**
- **OVERNIGHT USES 0 PAOT**

**OTHER:** Four miles of trail.

**IMPROVEMENT PROGRAMS:** The capital improvement and other improvement programs required by the Regional Goals and Policies Plan for this area shall be implemented. The improvements include, but are not limited to, the following:

1. Improvements required by the Surface Volume IV of the Water Quality Management Plan as shown on Figure VIII 1 through 18 of Volume I of the 208 Water Quality Plan.
2. The highway and transit improvements indicated in the Transportation Element of the Regional Goals and Policies Plan.
3. Stream zone restoration as indicated in Volume III of the Water Quality Management Plan, the Stream Environment Zone Restoration Program. (To be completed.)

PAS 003 -- LOWER TRUCKEE
Page 3
4. The scenic restoration and landscaping improvements indicated in the Scenic Quality Implementation Program for the Highway 89 corridor. (To be completed)
004 -- BURTON CREEK

PLAN DESIGNATION:

Land Use Classification  CONSERVATION
Management Strategy    MITIGATION
Special Designation     TDR RECEIVING AREA FOR:

1. Multi-Residential Units (Limited to employee housing)

DESCRIPTION:

Location: This area forms the headwaters to Burton Creek and is depicted on TRPA maps B-7, C-6, C-7, D-6, and the Tahoe City Quadrangle.

Existing Uses: The area is managed for public use by the USFS and State of California. The area is suitable for timber harvest, limited grazing, and dispersed recreation, but to this date, very little resource management has occurred. Developed facilities and services are lacking.

Existing Environment: The area has good plant diversity and offers excellent wildlife habitat. The majority of the land area has good capability. Dominant natural features include Burton Creek and Antone Meadows.

PLANNING STATEMENT: This planning area should continue to provide a full range of low to moderate resource use including opportunities for hiking, timber harvest, wildlife management, grazing of livestock, and recreation.

PLANNING CONSIDERATIONS:

1. Access to the area is limited by a poorly maintained road system.

2. Recreational and resource management opportunities are constrained by road conditions and lack of rights-of-way.

3. The dam at Antone Meadows creates a fish barrier and the pipe diversion out of the dam is poorly maintained and detracts from the surrounding scenic quality.

SPECIAL POLICIES:

1. Placer County and the Tahoe City Advisory Council, in cooperation with TRPA, have commenced a general plan review of the areas included in Plan Areas 001A, 001B, 002, 003, 004, 005, 006, 007, 008, 009A, 009B, 010, 011, 012, 171, 172, 173, and 174. Until that general plan process has been completed the Plan Areas designated 001A, 001B, and 009A have been designated preliminary Community Plan areas. However, it is the intent of TRPA that an indepth examination of the entire area be undertaken during the general plan process to determine the final areas that shall be subject to Community Plan incentives, and establish the final boundaries of Community Plan areas, as well as to develop other relevant planning considerations.
Proposals for inclusion of any significant additional areas within Community Plan boundaries shall demonstrate compliance with the criteria for such inclusion set forth in the Code of Ordinances.

1. Provide opportunities for intensive resource management practices to include regeneration harvest and selective cutting.

2. The water diversion at Antone Meadows should be eliminated, if possible, or at the very least, the diversion pipe should be concealed to eliminate visual impacts.

3. Improvement or expansion of the road system should be compatible with the type and intensity of use. The road through the meadow should be relocated to higher ground and bridge spans should be installed where the road crosses stream channels.

4. Logging road spurs in this area should be scarified and revegetated.

5. Provide opportunities to expand public camping opportunities.

PERMISSIBLE USES: Pursuant to Chapter 18 PERMISSIBLE USES and if applicable, Chapter 51 PERMISSIBLE USES AND ACCESSORY STRUCTURES IN THE SHOREZONE AND LAKEZONE, the following primary uses may be permitted within all or a portion of the Plan Area. The list indicates if the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed shall be considered nonconforming uses within this Plan Area. The establishment of new uses not listed shall be prohibited within this Plan Area.

General List: The following list of permissible uses is applicable throughout the Plan Area.

Residential

- Employee housing (S), single family dwelling (S), and summer homes (S).

Commercial

- Nursery (S).

Public Service

- Cemeteries (S), pipelines and power transmission lines (S), local public health and safety facilities (S), transit stations and terminals (S), transmission and receiving facilities (S), and transportation routes (S).

Recreation

- Cross country skiing courses (S), day use areas (S), developed campgrounds (S), group facilities (S), outdoor recreation concessions (S), riding and hiking trails (A), rural sports (S), off road vehicle courses (S), undeveloped campgrounds (S), and snowmobile courses (S).

Resource Management

- Reforestation (A), regeneration harvest (A), sanitation salvage cut (A), selection cut (A), special cut (A), thinning (A), timber stand improvement (A), tree farms (S), early successional stage vegetation management (A), nonstructural fish habitat management (A), nonstructural wildlife habitat management (A), structural fish habitat management (A), structural wildlife habitat management (A), farm/ranch accessory structures (S), grazing (S), range pasture management (A), range improvement (A), fire detection and suppression (A), fuels treatment (A), insect and disease suppression (A).
(A), prescribed fire management (A), sensitive plant management (A), uncommon plant community management (A), erosion control (A), SEZ restoration (A), and run-off control (A).

**MAXIMUM DENSITIES:** Pursuant to Chapter 21 DENSITY, the following list establishes the maximum allowable densities that may be permitted for any parcel located within the Plan Area. The actual development permitted may be further limited by transfer of development rights limitations, residential density incentive program, special use determinations, allocation limitations and general site development standards.

<table>
<thead>
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<th>USE</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td></td>
</tr>
<tr>
<td>Single Family</td>
<td>1 unit per parcel</td>
</tr>
<tr>
<td>Summer Home</td>
<td>1 unit per parcel</td>
</tr>
<tr>
<td>Employee Housing</td>
<td>4 multi-residential housing units for employees</td>
</tr>
<tr>
<td></td>
<td>housing associated with State Park lands.</td>
</tr>
<tr>
<td>Recreation</td>
<td></td>
</tr>
<tr>
<td>Developed Campground</td>
<td>8 sites per acre</td>
</tr>
<tr>
<td>Group Facilities</td>
<td>25 persons per acre</td>
</tr>
</tbody>
</table>

**RESIDENTIAL BONUS UNITS:** Pursuant to Chapter 35, the maximum number of residential bonus units which may be permitted for this Plan Area is 0 units.

**MAXIMUM COMMUNITY NOISE EQUIVALENT LEVEL:** The maximum community noise equivalent level for this Plan Area is 50 CNEL.

**ADDITIONAL DEVELOPED OUTDOOR RECREATION:** The following are the targets and limits for additional developed outdoor recreation facilities specified in Chapter 13 to be located within this Plan Area. Specific projects and their timing are addressed in the TRPA Five-Year Recreation Program pursuant to Chapter 33 Allocation of Development. The following additional capacities allowed are measured in persons at one time:

- **SUMMER DAY USES 0 PAOT**
- **WINTER DAY USE 0 PAOT**
- **OVERNIGHT USES 600 PAOT**
- **OTHER:** 12 miles of trail.

**IMPROVEMENT PROGRAMS:** The capital improvement and other improvement programs required by the Regional Goals and Policies Plan for this area shall be implemented. The improvements include, but are not limited to, the following:

1. Stream zone restoration as indicated in Volume III of the Water Quality Management Plan, the Stream Environment Zone Restoration Program. (To be completed.)

-PAS 004 -- BURTON CREEK
Page 3
PLAN DESIGNATION:

Land Use Classification: RESIDENTIAL
Management Strategy: MITIGATION
Special Designation: SCENIC RESTORATION AREA

DESCRIPTION:

Location: This Plan Area is located along Highway 28 between Tahoe City and Lake Forest and can be found on TRPA maps C-6, C-7 and D-6.

Existing Uses: This area is made up of low density residential lake front homes, planned unit residential units in the Rocky Ridge Subdivision, and a motel. The area is 90 percent built out.

Existing Environment: This area is 60 percent low hazard, 25 percent high hazard and 15 percent SEZ. Land coverage is 40 percent plus an additional 22 percent disturbed. The shorezone tolerance districts are classified 4 and 7 and contain prime fish habitats.

PLANNING STATEMENT: This area should continue to be a residential area of the same type and character that now exists.

PLANNING CONSIDERATIONS:

1. There is residential intrusion into the SEZs.
2. The shoreline is showing evidence of bank erosion and large unstable areas.
3. Lake front parcel improvements are not adequate with respect to drainage, infiltration, and slope stabilization.
4. The prime fish habitat in Lake Tahoe is tentatively identified for habitat restoration.
5. Scenic Roadway Unit 15 and Scenic Shoreline Units 15 and 16 are within this Plan Area. Shoreline Unit 16 is targeted for scenic restoration as required by the scenic threshold.

SPECIAL POLICIES:

1. The wall barrier on Burton Creek should be removed or otherwise renovated to facilitate upstream migration of fish.
2. Placer County and the Tahoe City Advisory Council, in cooperation with TRPA, have commenced a general plan review of the areas included in Plan Areas 001A, 001B, 002, 003, 004, 005, 006, 007, 008, 009A, 009B, 010, 011, 012, 171, 172, 173 and 174. Until that general plan process has been completed the Plan Areas designated 001A, 001B, and 009A have been designated preliminary Community Plan areas. However, it is the intent of TRPA that an indepth examination of the entire area be undertaken during the general plan process to determine the final areas that shall be subject to Community Plan incentives, and establish the final boun-
The existing motel shall be conforming; however, there shall be no additional tourist accommodation units in this area.

**PERMISSIBLE USES:** Pursuant to Chapter 18 PERMISSIBLE USES and if applicable, Chapter 51 PERMISSIBLE USES AND ACCESSORY STRUCTURES IN THE SHOREZONE AND LAKEZONE, the following primary uses may be permitted within all or a portion of the Plan Area. The list indicates if the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed shall be considered nonconforming uses within this Plan Area. The establishment of new uses not listed shall be prohibited within this Plan Area.

**General List:** The following list of permissible uses is applicable throughout the Plan Area:

- **Residential**
  - Single family dwelling (A).

- **Tourist Accommodation**
  - Hotel, motel and other transient dwelling units (S) and bed and breakfast facilities (S).

- **Commercial**
  - Professional offices (S).

- **Public Service**
  - Local post offices (S), local public health and safety facilities (S), public utility centers (S), pipelines and power transmission (S), transit stations and terminals (S), transportation routes (S), and transmission and receiving facilities (S).

- **Recreation**
  - Day use areas (A), participant sports (S), and riding and hiking trails (A).

- **Resource Management**
  - Reforestation (A), sanitation salvage cut (A), special cut (A), thinning (A), early successional stage vegetation management (A), structural and nonstructural fish/wildlife habitat management (A), fire detection and suppression (A), fuels treatment/management (A), insect and disease suppression (A), sensitive and uncommon plant management (A), erosion control (A), SEZ restoration (A), and runoff control (A).

**Shorezone:** Within the specified shorezone tolerance district, the following primary uses may be permitted in the backshore, nearshore, and foreshore. Accessory structures shall be regulated pursuant to the regulations applicable to the primary use upon which they are dependent in accordance with Chapter 18. The following structures may be permitted in the shorezone as an allowed (A) or special (S) use only if they are accessory to an existing, allowed use located on the same or adjoining littoral parcel.

**Tolerance Districts 4 and 7**

- **Primary Uses**
  - Beach recreation (A), safety and navigational devices (A), and salvage operations (A).

- **Accessory Structures**
  - Buoys (A), piers (A), fences (S), boat ramps (S), breakwaters or jetties (S) floating docks and platforms (A), shoreline protective structures (S), and water intake lines (S).
MAXIMUM DENSITIES: Pursuant to Chapter 21 DENSITY, the following list establishes the maximum allowable densities that may be permitted for any parcel located within the Plan Area. The actual development permitted may be further limited by transfer of development rights limitations, residential density incentive program, special use determinations, allocation limitations and general site development standards.

<table>
<thead>
<tr>
<th>USE</th>
<th>MAXIMUM DENSITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td></td>
</tr>
<tr>
<td>Single Family Dwelling</td>
<td>1 unit per parcel</td>
</tr>
<tr>
<td>Tourist Accommodation</td>
<td></td>
</tr>
<tr>
<td>Bed and breakfast facilities</td>
<td>8 units per acre</td>
</tr>
<tr>
<td>Hotel, motel and other</td>
<td></td>
</tr>
<tr>
<td>transient dwelling units</td>
<td></td>
</tr>
<tr>
<td>- with less than 10% of units</td>
<td>20 units per acre</td>
</tr>
<tr>
<td>with kitchens</td>
<td></td>
</tr>
<tr>
<td>- with 10% or more units</td>
<td>8 units per acre</td>
</tr>
<tr>
<td>with kitchens</td>
<td></td>
</tr>
</tbody>
</table>

RESIDENTIAL BONUS UNITS: Pursuant to Chapter 35, the maximum number of residential bonus units which may be permitted for this Plan Area is 0 units.

MAXIMUM COMMUNITY NOISE EQUIVALENT LEVEL: The maximum community noise equivalent level for this Plan Area is 55 CNEL. The maximum community noise equivalent level for the Highway 28 corridor is 55 CNEL.

ADDITIONAL DEVELOPED OUTDOOR RECREATION: The following are the targets and limits for additional developed outdoor recreation facilities specified in Chapter 13 to be located within this Plan Area. Specific projects and their timing are addressed in the TRPA Five-Year Recreation Program pursuant to Chapter 33 Allocation of Development. The following additional capacities allowed are measured in persons at one time:

SUMMER DAY USES 0 PAOT  WINTER DAY USE 0 PAOT  OVERNIGHT USES 0 PAOT

IMPROVEMENT PROGRAMS: The capital improvement and other improvement programs required by the Regional Goals and Policies Plan for this area shall be implemented. The improvements include, but are not limited to, the following:

1. Improvements required by Volume IV of the Surface Water Quality Management Plan, as shown on Figures VIII-1 through 18 of Volume I of the 208 Water Quality Plan.

2. The highway and transit improvements indicated in the Transportation Element of the Regional Goals and Policies Plan.

3. Stream zone restoration as indicated in Volume III the Stream of the Water Quality Management Plan, Environment Zone Restoration Program. (To be completed.)

4. The scenic restoration and landscaping improvements indicated in the Scenic Quality Implementation Program for the Highway 28 corridor. (To be completed.)
006 -- FISH HATCHERY

PLAN DESIGNATION:

Land Use Classification                   RECREATION
Management Strategy                      REDIRECTION
Special Designation                      SCENIC RESTORATION AREA

DESCRIPTION:

Location: This area encompasses most of the meadow area extending from the shoreline in the vicinity of the U.S. Coast Guard facility to the County Administrative Center north of State Highway 28. The area is depicted on TRPA map D-6.

Existing Uses: The majority of the area is publicly owned and contains the County Administrative Center, TCPUD Recreation Area, the U.S. Coast Guard facility, and an abandoned state fish hatchery.

Existing Environment: Most of the area is classified as stream environment zone, and the shorezone is classified as a shorezone tolerance district 1. The predominant riparian-type vegetation of the area has been extensively modified to accommodate various types of recreational and urban support services.

PLANNING STATEMENT: This area should continue to provide both dispersed and more intensive forms of recreation while preserving, to the extent possible, its natural character and value as a stream environment zone. Intensive uses in sensitive areas should be relocated to other less-sensitive sites in the planning area, and inappropriate uses should be redirected outside the planning area.

PLANNING CONSIDERATIONS:

1. Scenic Shorezone Unit 16 and Scenic Roadway Unit 16 are within this Plan Area. Both are targeted for scenic restoration according to the scenic threshold.

2. The open meadow areas should be maintained as scenic corridors from the highway and all development should be screened from views with appropriate landscaping. Other design considerations must be consistent with the scenic restoration plan for Roadway Unit #16.

3. Numerous developed facilities are located within the SEZ, which reduces the nutrient cleansing capacity of the meadow areas.

4. Most of the developed facilities lack 208 water quality improvements.

5. Not all uses in the area are recreation oriented.

6. Burton Creek has been extensively modified.

SPECIAL POLICIES:

1. No new land coverage for the County Administrative Center shall be permitted in the SEZ, and the entire facility should be retrofitted with Best Management Practices as soon as feasible.
2. The County is considering moving the Department of Public Works. The existing coverage should be credited toward the expansion of the County Administrative Center.

3. The campsites should be eliminated in this area over the long term and relocated in a Plan Area with higher capability land.

4. The undeveloped portions of the SEZ should be managed for scenic restoration and low intensity uses.

5. Wherever possible, disturbed sites in the SEZ should be restored. Incentives should be given property owners to encourage restoration. This Plan Area is a high priority area for land coverage reduction.

6. The facilities associated with the boat ramp and Coast Guard Station should be retrofitted with BMPs as soon as feasible.

7. Placer County and the Tahoe City Advisory Council, in cooperation with TRPA, have commenced a general plan review of the areas included in Plan Areas 601A, 601B, 602, 603, 604, 605, 606, 607, 608, 609A, 609B, 610, 611, 612, 171, 172, 173 and 174. Until that general plan process has been completed the Plan Areas designated 601A, 601B, and 609A have been designated preliminary Community Plan areas. However, it is the intent of TRPA that an indepth examination of the entire area be undertaken during the general plan process to determine the final areas that shall be subject to Community Plan incentives, and establish the final boundaries of Community Plan areas, as well as to develop other relevant planning considerations. Proposals for inclusion of any significant additional areas within Community Plan boundaries shall demonstrate compliance with the criteria for such inclusion set forth in the Code of Ordinances.

PERMISSIBLE USES: Pursuant to Chapter 18 PERMISSIBLE USES and if applicable, Chapter 51 PERMISSIBLE USES AND ACCESSORY STRUCTURES IN THE SHOREZONE AND LAKEZONE, the following primary uses may be permitted within all or a portion of the Plan Area. The list indicates if the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed shall be considered nonconforming uses within this Plan Area. The establishment of new uses not listed shall be prohibited within this Plan Area.

**General List:** The following list of permissible uses is applicable throughout the Plan Area.

- **Residential**
  - Single family dwelling (A).

- **Public Service**
  - Pipelines and power transmission (S), transmission and receiving facilities (S), local public health and safety facilities (A), public utility centers (S), transportation routes (S), government offices (S), transit stations and terminals (S), cultural facilities (S), and regional public health and safety facilities (S).

- **Recreation**
  - Day use areas (A), riding and hiking trails (S), participant sports (S), developed campgrounds (S), beach recreation (A), and boat launching facilities (S).

- **Resource Management**
  - Reforestation (A), regeneration harvest (S) sanitation salvage cut (A), selection cut (S) special cut (S), thinning (A), tree farms (S), timber stand improvement (S), early successional stage vegetation management (A), non-structural fish habitat management (A), non-structural wildlife habitat management (A), structural fish habitat
management (S), structural wildlife habitat management (S),
farm/ranch accessory structures (S), fire detection and suppression
(A), fuels treatment (S), insect and disease suppression (A),
prescribed fire management (A), sensitive plant management (A),
uncommon plant community management (A), erosion control (A),
SEZ restoration (A), and run-off control (A).

Shorezone: Within the specified shorezone tolerance district, the following primary uses may be per-
mitted in the backshore, nearshore, and foreshore. Accessory structures shall be regulated pursuant to
the regulations applicable to the primary use upon which they are dependent in accordance with Chap-
ter 18. The following structures may be permitted in the shorezone as an allowed (A) or special (S) use
only if they are accessory to an existing, allowed use located on the same or adjoining littoral parcel.

Tolerance District 1

Primary Uses

Beach recreation (A), safety and navigation facilities (A), boat
launching facilities (S), and water oriented outdoor recreation con-
cessions (S).

Accessory Structures

Buoys (A), piers (A), fences (S), boat ramps (A), floating docks and
platforms (A), shoreline protective structures (S), and water intake
lines (A).

MAXIMUM DENSITIES: Pursuant to Chapter 21 DENSITY, the following list establishes the maximum
allowable densities that may be permitted for any parcel located within the Plan Area. The actual development
permitted may be further limited by transfer of development rights limitations, residential density incentive
program, special use determinations, allocation limitations and general site development standards.

<table>
<thead>
<tr>
<th>USE</th>
<th>MAXIMUM DENSITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td></td>
</tr>
<tr>
<td>Single Family Dwelling</td>
<td>1 unit per parcel</td>
</tr>
<tr>
<td>Recreation</td>
<td></td>
</tr>
<tr>
<td>Developed Campgrounds</td>
<td>8 sites per acre</td>
</tr>
</tbody>
</table>

RESIDENTIAL BONUS UNITS: Pursuant to Chapter 35, the maximum number of residential bonus
units which may be permitted for this Plan Area is 0 units.

MAXIMUM COMMUNITY NOISE EQUIVALENT LEVEL: The maximum community noise
equivalent level for this Plan Area is 55 CNEL.

ADDITIONAL DEVELOPED OUTDOOR RECREATION: The following are the targets and limits
for additional developed outdoor recreation facilities specified in Chapter 13 to be located within this Plan
Area. Specific projects and their timing are addressed in the TRPA Five-Year Recreation Program pursuant to
Chapter 33 Allocation of Development. The following additional capacities allowed are measured in persons at
one time:

SUMMER DAY USES 0 PAOT   WINTER DAY USE 0 PAOT   OVERNIGHT USES 0 PAOT

IMPROVEMENT PROGRAMS: The capital improvement and other improvement programs required
by the Regional Goals and Policies Plan for this area shall be implemented. The improvements include, but are not limited to, the following:

1. Improvements required by Volume III of the Surface Water Quality Management Plan, as shown on Figure VIII-1 through 18 of Volume I of the 305 Water Quality Plan.

2. Provide mass transportation as indicated in the Regional Goals and Policies Plan to this recreation area.


4. The scenic restoration and landscaping improvements indicated in the Scenic Quality Implementation Program for the Highway 28 corridor. (To be completed)
007 -- LAKE FOREST GLEN

PLAN DESIGNATION:

Land Use Classification: RESIDENTIAL
Management Strategy: MITIGATION
Special Designation: SCENIC RESTORATION AREA

DESCRIPTION:

Location: This area is located between Tahoe City and Dollar Point along Highway 28 and can be found on TRPA map D-6.

Existing Uses: The primary use in this area is medium density residential condominiums with some commercial uses. The development is relatively new and is substantially committed to existing condominium maps. This area is 90 percent built out.

Existing Environment: This area is 55 percent low hazard and 45 percent SEZ. The land coverage is 50 percent plus an additional 30 percent disturbed. The meadow area has been extensively modified.

PLANNING STATEMENT: This area should be continued as a medium density residential area with some additional compatible commercial uses.

PLANNING CONSIDERATIONS:

1. The stream environment zone is extensively covered.
2. Scenic Roadway Unit 16 is within this Plan Area and is targeted for scenic restoration as required by the scenic threshold.

SPECIAL POLICIES:

1. A high priority should be given to evaluation and restoration of disturbed SEZs. There should be no further encroachment into the meadow.
2. Commercial development should be limited to the properties fronting Highway 28 north of upper Lake Forest Road, discouraging strip development as specified in the Tahoe City Community Plan (Special Area #1).
3. Provide opportunities for development of a variety of housing for seniors with emphasis on affordable housing.
4. Placer County and the Tahoe City Advisory Council, in cooperation with TRPA, have commenced a general plan review of the areas included in Plan Areas 001A, 001B, 002, 003, 004, 005, 006, 007, 008, 009A, 009B, 010, 011, 012, 171, 172, 173 and 174. Until that general plan process has been completed the Plan Areas designated 001A, 001B, and 009A have been designated preliminary Community Plan areas. However, it is the intent of TRPA that an in-depth examination of the entire area be undertaken during the general plan process to determine the final areas that shall be subject to Community Plan incentives; and establish the final boun-
PERMISSIBLE USES: Pursuant to Chapter 18 PERMISSIBLE USES and if applicable, Chapter 51 PERMISSIBLE USES AND ACCESSORY STRUCTURES IN THE SHOREZONE AND LAKEZONE, the following primary uses may be permitted within all or a portion of the Plan Area. The list indicates if the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed shall be considered nonconforming uses within this Plan Area. The establishment of new uses not listed shall be prohibited within this Plan Area.

General List: The following list of permissible uses is applicable throughout the Plan Area, except as noted in Special Area #1.

- **Residential**
  - Multiple family dwellings (A) and single family dwelling (A).

- **Public Service**
  - Local post offices (S), local public health and safety facilities (S), public utility centers (S), pipelines and power transmission (S), transit stations and terminals (S), transportation routes (S), and transmission and receiving facilities (S).

- **Recreation**
  - Day use areas (A), participant sports facilities (S), and riding and hiking trails (A).

- **Resource Management**
  - Reforestation (A), sanitation salvage cut (A), special cut (A), thinning (A), early successional stage vegetation management (A), structural and nonstructural fish/wildlife habitat management (A), fire detection and suppression (A), fuels treatment/management (A), insect and disease suppression (A), sensitive and uncommon plant management (A), erosion control (A), SEZ restoration (A), and runoff control (A).

Special Area #1: The following list of permissible uses is applicable in Special Area #1.

All the uses listed on the General List, plus the following additions:

- **Commercial**
  - Financial services (A), health care services (A), personal services (A), and professional offices (A).

- **Public Service**
  - Churches (S).

MAXIMUM DENSITIES: Pursuant to Chapter 21 DENSITY, the following list establishes the maximum allowable densities that may be permitted for any parcel located within the Plan Area. The actual development permitted may be further limited by transfer of development rights limitations, residential density incentive program, special use determinations, allocation limitations and general site development standards.

<table>
<thead>
<tr>
<th>USE</th>
<th>MAXIMUM DENSITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td></td>
</tr>
<tr>
<td>Single Family Dwelling</td>
<td>1 unit per parcel</td>
</tr>
<tr>
<td>Multiple Family Dwellings</td>
<td>15 units per acre</td>
</tr>
</tbody>
</table>

PAS 007 -- LAKE FOREST GLEN
Page 2
RESIDENTIAL BONUS UNITS: Pursuant to Chapter 35, the maximum number of residential bonus units which may be permitted for this Plan Area is 0 units.

MAXIMUM COMMUNITY NOISE EQUIVALENT LEVEL: The maximum community noise equivalent level for this Plan Area is 55 CNEL. The maximum community noise equivalent level for the Highway 28 corridor is 55 CNEL.

ADDITIONAL DEVELOPED OUTDOOR RECREATION: The following are the targets and limits for additional developed outdoor recreation facilities specified in Chapter 13 to be located within this Plan Area. Specific projects and their timing are addressed in the TRPA Five-Year Recreation Program pursuant to Chapter 33 Allocation of Development. The following additional capacities allowed are measured in persons at one time:

SUMMER DAY USES 0 PAOT  WINTER DAY USE 0 PAOT  OVERNIGHT USES 0 PAOT

IMPROVEMENT PROGRAMS: The capital improvement and other improvement programs required by the Regional Goals and Policies Plan for this area shall be implemented. The improvements include, but are not limited to, the following:

1. Improvements required by Volume IV of the Surface-Water Quality Management Plan, as shown on Figure VIII-1 through 18 of Volume I of the 200 Water Quality Plan.

2. The highway and transit improvements indicated in the Transportation Element of the Regional Goals and Policies Plan.

3. Stream zone restoration as indicated in Volume III of the Water Quality Management Plan, the Stream Environment Zone Restoration Program. (To be completed.)

4. The scenic restoration and landscaping improvements indicated in the Scenic Quality Implementation Program for the Highway 28 corridor. (To be completed.)
008 -- LAKE FOREST

PLAN DESIGNATION:

Land Use Classification       RESIDENTIAL
Management Strategy           MITIGATION
Special Designation           NONE

DESCRIPTION:

Location: This area includes the old residential area along Lake Forest Road near Tahoe City and can be found on TRPA map D-6.

Existing Uses: This is an area of mixed residential uses which range from old summer homes to newer condominium projects. There is extensive shoreline which is in public ownership. The area is 90 percent built out in the private lands.

Existing Environment: This area is 75 percent low hazard and 25 percent SEZ. The land coverage is 20 percent plus an additional 15 percent disturbed. The shorezone is classified as tolerance districts 1, 4 and 7 and as prime fish habitat. A large portion of the SEZ on the State of California's Skylandia parcel is relatively undisturbed.

PLANNING STATEMENT: This area should continue to serve as a residential neighborhood of the existing type and character.

PLANNING CONSIDERATIONS:

1. There are eroding cliffs and public access problems on the shoreline.
2. The older portions of the area are not up to minimal BMP standards.
3. This area has some scenic problems identified with being an older area of mixed uses.
4. The prime fish habitat in Lake Tahoe is tentatively identified for habitat restoration.
5. Scenic Shoreline Unit 16 is within this Plan Area.

SPECIAL POLICIES:

1. The Skylandia property should be maintained as a subregional recreation area as should the Tahoe City Public Utility District beach. Community involvement must be encouraged in any planned development of recreation facilities in this area.

2. To be consistent with the development standards contained in Chapter 54 of the Code and Goal #1, Policy 10 of the Goals and Policies Plan, the shoreline should be limited to one multiple use pier on Placer County property. The existing piers should be allowed to remain.

3. Placer County and the Tahoe City Advisory Council, in cooperation with TRPA, have commenced a general plan review of the areas included in Plan Areas 001A, 001B, 002, 003, 004.
Until that general plan process has been completed the Plan Areas designated 001A, 001B, and 009A have been designated preliminary Community Plan areas. However, it is the intent of TRPA that an indepth examination of the entire area be undertaken during the general plan process to determine the final areas that shall be subject to Community Plan incentives, and establish the final boundaries of Community Plan areas, as well as to develop other relevant planning considerations. Proposals for inclusion of any significant additional areas within Community Plan boundaries shall demonstrate compliance with the criteria for such inclusion set forth in the Code of Ordinances.

3. The shoreline area should remain in public ownership, and additional access and parking should be provided at Skylandia.

4. Organization should be encouraged to eliminate traffic and congestion problems at the Tahoe City Public Utility District beach.

PERMISSIBLE USES: Pursuant to Chapter 18 PERMISSIBLE USES and if applicable, Chapter 51 PERMISSIBLE USES AND ACCESSORY STRUCTURES IN THE SHOREZONE AND LAKEZONE, the following primary uses may be permitted within all or a portion of the Plan Area. The list indicates if the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed shall be considered nonconforming uses within this Plan Area. The establishment of new uses not listed shall be prohibited within this Plan Area.

General List: The following list of permissible uses is applicable throughout the Plan Area:

**Residential**
- Single family dwelling (A).

**Tourist Accommodation**
- Bed and breakfast facilities (S).

**Public Service**
- Local public health and safety facilities (S), transit stations and terminals (S), pipelines and power transmission (S), transmission and receiving facilities (S), transportation routes (S), public utility centers (S), local post offices (S), and churches (S).

**Recreation**
- Participant sports facilities (S), day use areas (A), riding and hiking trails (A), and beach recreation (A).

**Resource Management**
- Reforestation (A), sanitation salvage cut (A), special cut (A), thinning (A), early successional stage vegetation management (A), structural and nonstructural fish/wildlife habitat management (A), fire detection and suppression (A), fuels treatment/management (A), insect and disease suppression (A), sensitive and uncommon plant management (A), erosion control (A), SEZ restoration (A), and runoff control (A).

**Shorezone:** Within the specified shorezone tolerance district, the following primary uses may be permitted in the backshore, nearshore, and foreshore. Accessory structures shall be regulated pursuant to the regulations applicable to the primary use upon which they are dependent in accordance with Chapter 18. The following structures may be permitted in the shorezone as an allowed (A) or special (S) use only if they are accessory to an existing, allowed use located on the same or adjoining littoral parcel.

**Tolerance District 1**

**Primary Uses**
- Safety and navigational devices (A) and salvage operations (A).
Accessory Structures: Buoys (A), piers (A), fences (S), boat ramps (S), floating docks and platforms (A), and water intake lines (S).

Tolerance Districts 4 and 7

Primary Uses: Beach recreation (A), safety and navigational devices (A), water oriented outdoor recreation concessions (S), and salvage operations (A).

Accessory Structures: Buoys (A), piers (A), fences (S), boat ramps (S), breakwaters or jetties (S), floating docks and platforms (A), shoreline protective structures (S), and water intake lines (S).

MAXIMUM DENSITIES: Pursuant to Chapter 21 DENSITY, the following list establishes the maximum allowable densities that may be permitted for any parcel located within the Plan Area. The actual development permitted may be further limited by transfer of development rights limitations, residential density incentive programs, special use determinations, allocation limitations and general site development standards.

<table>
<thead>
<tr>
<th>USE</th>
<th>MAXIMUM DENSITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td></td>
</tr>
<tr>
<td>Single Family Dwelling</td>
<td>1 unit per parcel</td>
</tr>
<tr>
<td>Tourist Accommodation</td>
<td></td>
</tr>
<tr>
<td>Bed and Breakfast Facilities</td>
<td>10 units per acre</td>
</tr>
</tbody>
</table>

RESIDENTIAL BONUS UNITS: Pursuant to Chapter 35, the maximum number of residential bonus units which may be permitted for this Plan Area is 0 units.

MAXIMUM COMMUNITY NOISE EQUIVALENT LEVEL: The maximum community noise equivalent level for this Plan Area is 55 CNEL.

ADDITIONAL DEVELOPED OUTDOOR RECREATION: The following are the targets and limits for additional developed outdoor recreation facilities specified in Chapter 13 to be located within this Plan Area. Specific projects and their timing are addressed in the TRPA Five-Year Recreation Program pursuant to Chapter 33 Allocation of Development. The following additional capacities allowed are measured in persons at one time:

SUMMER DAY USES 0 PAOT  WINTER DAY USE 0 PAOT  OVERNIGHT USES 0 PAOT

IMPROVEMENT PROGRAMS: The capital improvement and other improvement programs required by the Regional Goals and Policies Plan for this area shall be implemented. The improvements include, but are not limited to, the following:

1. Improvements required by Volume IV of the Surface Water Quality Management Plan as shown on Figure VIII-1 through 18 of Volume I of the 2008 Water Quality Plan.
2. The highway and transit improvements indicated in the Transportation Element of the Regional Goals and Policies Plan.

009A -- LAKE FOREST COMMERCIAL

PLAN DESIGNATION:

Land Use Classification                   COMMERCIAL/PUBLIC SERVICE
Management Strategy                     REDIRECTION
Special Designation                     PRELIMINARY COMMUNITY PLAN AREA
TDR RECEIVING AREA FOR:

1. Existing development

DESCRIPTION:

Location: This area is located in the Lake Forest area along the Old Lake Forest Road and is located on TRPA map D-6.

Existing Uses: The area consists of small parcels containing commercial and some industrial uses. The area is 90 percent built out.

Existing Environment: The Lake Forest area is low hazard with some SEZ. The land coverage and disturbance are high.

PLANNING STATEMENT: The Lake Forest area should continue to provide commercial services while substantial improvements are made to the area.

The Lake Forest Commercial area of Plan Area 009A was identified initially as a candidate area for Community Plan status. During the course of the planning process, however, it became the consensus of the Planning Team, in close consultation with members of the Lake Forest community, that due to the limited size of the community, the limitations on new development, and the nature of environmental improvement needs in the community, that the "Community Plan" approach was not warranted. It was felt that goals, policies and regulations could be adequately addressed through the Plan Area Statement process, as modified by this section.

The theme for the Lake Forest Commercial Plan Area Statement is generally of the "Local-serving Retail, Services, and Storage" nature. The Plan recognizes that the development pattern of Lake Forest, historically, has resulted in a mosaic of mixed uses that would generally be discouraged under present planning theory. Secondly, the Plan recognizes that the Plan area is comparatively small and does not lend itself to significant expansion of radical change.

The primary goal and objectives of the Plan is to improve on existing development, by enhancing the appearance of the community, providing environmental benefits, and resolving conflicting land use patterns as much as possible.

PLANNING CONSIDERATIONS:

1. The area needs rehabilitation with an emphasis on scenic restoration.

2. Incentives should be offered at the local level to help achieve these goals.
SPECIAL POLICIES:

1. The Lake Forest commercial area should continue to emphasize service-oriented commercial uses.

2. The Community Plan for this area shall include a scenic restoration plan program even though this is not an area identified by scenic thresholds for mandatory attainment, but it does need restoration under such review criteria.

3. Placer County and the Tahoe City Advisory Council, in cooperation with TRPA, have commenced a general plan review of the areas included in Plan Areas 001A, 001B, 002, 003, 004, 005, 006, 007, 008, 009A, 009B, 010, 011, 012, 171, 172, 173 and 174. Until that general plan process has been completed the Plan Areas designated 001A, 001B, and 009A have been designated preliminary Community Plan areas. However, it is the intent of TRPA that an indepth examination of the entire area be undertaken during the general plan process to determine the final areas that shall be subject to Community Plan incentives, and establish the final boundaries of Community Plan areas, as well as to develop other relevant planning considerations. Proposals for inclusion of any significant additional areas within Community Plan boundaries shall demonstrate compliance with the criteria for such inclusion set forth in the Code of Ordinances.

4. If and when a redevelopment agency is created, this PAS should be considered by the TRPA for a special designation as Eligible for Redevelopment Plans.

5. Two special areas are created to more closely define development themes and permitted uses. Special Area 1, on the western side of the Community Plan, is oriented toward "light" commercial and office uses. Special Area 2, on the eastern side of the Community Plan, is more oriented toward "heavy" commercial uses. These designations are based on existing development pattern as well as historic County zoning designations (see Figure 3).

6. Given the limited opportunities in the Lake Tahoe basin for siting the types of necessary services located in Special Area 2, this Plan does not encourage relocation of such uses. Rather, the goal for this area is to encourage remodeling and rehabilitation of facilities to make properties and uses more congruous. Uses, which in their nature tend to be obtrusive, should be screened and buffered to the extent practical, to minimize such obtrusiveness.

Because of the unusual mix of uses in this area, special policies with respect to noise are important also. Commercial businesses should conduct their operation in such a way as to not create adverse noise impacts on neighboring properties, for example, through observance of appropriate working hours.

7. Ensure that the design elements of new, remodeled and rehabilitated development are compatible with the scenic, recreation and community values of Lake Forest and the region, through use of the Design and Sign regulations for the area.

8. If and when a redevelopment agency is created, this PAS should be considered by the TRPA for a special designation as Eligible for Redevelopment Plans.

9. The allocation policy shall assign priority to projects which emphasize remodeling and rehabilitation of substandard development.

10. Tourist accommodation facilities should be considered for Special Area 1 only.

11. Strip commercial development in this area should be discouraged.

PAS 009A -- LAKE FOREST COMMERCIAL
Page 2
routes (S), and transmission and receiving facilities (A).

**Residential**

Employee housing (S), multiple family dwelling (S), and single family dwelling (S).

**Tourist Accommodation**

Bed and breakfast facilities (A), hotel, motels, and other transient dwelling units (S), and time sharing (hotel/motel).

**Commercial**

Auto, mobile home and vehicle dealers (A), building materials and hardware (A), eating and drinking places (A), food and beverage retail sales (A), furniture, home furnishings and equipment (A), general merchandise stores (A), mail order and vending (A), nursery (A), outdoor retail sales (S), service stations (A), amusement and recreation services (A), privately owned assembly and entertainment (S), outdoor amusements (S), animal husbandry services (A), auto repair and service (A), broadcasting studios (A), business support services (A), contract construction services (A), financial services (A), health care services (A), laundries and dry cleaning plant (A), personal services (A), professional offices (A), repair services (A), sales lots (A), schools—business and vocational (A), schools—pre-schools (A), secondary storage (A), food and kindred products (A), fuel and ice dealers (S), industrial services (A), printing and publishing (A), recycling and scrap (S), small scale manufacturing (A), storage yards (A), vehicle and freight terminals (A), vehicle storage and parking (A), warehousing (A), and wholesale and distribution (A).

**Public Service**

Cemeteries (S), churches (S), cultural facilities (A), day care centers (A), government offices (A), hospitals (S), local assembly and entertainment (A), local post office (A), local public health and safety facilities (A), membership organizations (A), publicly owned assembly and entertainment (S), public utility centers (S), regional public health and safety facilities (S), schools—kindergarten through secondary (S), social service organizations (A), pipelines and power transmission (S), transit stations and terminals (S), transportation routes (S), and transmission and receiving facilities (A).

**Recreation**

Day use areas (A), participant sports facilities (A), outdoor recreation concessions (S) riding and hiking trails (S), rural sports (S), visitor information center (S).

**Resource Management**

Reforestation (A), sanitation salvage cut (A), thinning (A), early successional stage vegetation management (A), nonstructural fish habitat management (A), nonstructural wildlife habitat management (A), structural fish habitat management (A), structural wildlife habitat management (A), fire detection and suppression (A), fuels treatment (A), insect and disease suppression (A), sensitive plant management (A), uncommon plant community management (A), erosion control (A), runoff control (A), and SEZ restoration (A).

**Special Area # 2 (Public Service/Industrial Area):** The following list of permissible uses is applicable throughout the Special Area.

**Residential**

Employee housing (S), multiple family dwelling (S), and single family dwelling (S).

PAS 009A -- LAKE FOREST COMMERCIAL

Page 4
8. The Lake Forest commercial area should continue to emphasize service oriented commercial use which is compatible with the surrounding residential and recreational uses.

9. Given existing conditions and the limited amount of new development contemplated by this Plan, no significant improvements to Lake Forest Road, other than ordinary maintenance and repair, are anticipated.

10. Safe and efficient use off Lake Forest Road should be accomplished through management strategies (rather than sizeable capital investments), such as enforcement of appropriate speed levels, and possibly a "stop" sign at an appropriate location.

11. Consideration should be given to a community parking lot at a centralized location, to reduce the use of the public right-of-way for parking.

**PERMISSIBLE USES:** Pursuant to Chapter 18 PERMISSIBLE USES and if applicable, Chapter 51 PERMISSIBLE USES AND ACCESSORY STRUCTURES IN THE SHOREZONE AND LAKEZONE, the following primary uses may be permitted within all or a portion of the Plan Area. The list indicates if the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed shall be considered nonconforming uses within this Plan Area. The establishment of new uses not listed shall be prohibited within this Plan Area.

**General List:** The following list of permissible uses is applicable throughout the Plan Area.

**Special Area #1 (Retail/Service Area):** the following list of permissible uses is applicable throughout the special area.

<table>
<thead>
<tr>
<th>Category</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>Employee housing (S), multiple family dwelling (S), and single family dwelling (S).</td>
</tr>
<tr>
<td>Tourist Accommodation</td>
<td>Bed and breakfast facilities (A), hotel, motels, and other transient dwelling units (S), and time sharing (hotel/motel design) (S).</td>
</tr>
<tr>
<td>Commercial</td>
<td>Auto, mobile home and vehicle dealers (S), building materials and hardware (S), eating and drinking places (A), food and beverage retail sales (A), furniture, home furnishings and equipment (A), general merchandise stores (A), mail order and vending (A), nursery (S), indoor retail sales (A), outdoor retail sales (S), service stations (S), amusements and recreation services (A), privately owned assembly and entertainment (S), outdoor amusements (S), broadcasting studios (A), business support services (A), construction services (A), financial services (A), health care services (S), laundries and dry cleaning plant (A), personal services (A), professional offices (A), repair services (A), schools - business and vocational (A), schools - pre-schools (A), food and kindred products (A), printing and publishing (A).</td>
</tr>
<tr>
<td>Public Service</td>
<td>Cemeteries (S), churches (S), cultural facilities (A), day care centers (A), government offices (A), hospitals (S), local assembly and entertainment (A), local post office (A), local public health and safety facilities (A), membership organizations (A), publicly owned assembly and entertainment (S), public utility centers (S), regional public health and safety facilities (S), schools - kindergarten through secondary (S), social service organizations (A), pipelines and power transmission (S), transit stations and terminals (S), transportation</td>
</tr>
</tbody>
</table>
Commercial

Auto, mobile home and vehicle dealers (S), building materials and hardware (A), eating and drinking places (A), food and beverage retail sales (A), furniture, home furnishings and equipment (A), general merchandise stores (A), mail order and vending (A), nursery (A), indoor retail sales (A), outdoor retail sales (S), service stations (S), amusement and recreation services (A), privately owned assembly and entertainment (S), outdoor amusement (S), animal husbandry services (A), auto repair and service (A), broadcasting studios (A), business support services (A), contract construction services (A), financial services (A), health care services (A), laundries and dry cleaning plant (A), personal services (A), professional offices (A), repair services (A), sales lots (A), schools, business and vocational (A), schools - pre-schools (A), secondary storage (A), food and kindred products (A), fuel and ice dealers (S), industrial services (A), printing and publishing (A), recycling and scrap (S), small scale manufacturing (S), storage yards (S), vehicle and freight terminals (A), vehicle storage and parking (A), warehousing (A), and wholesale and distribution (A).

Public Service

Cemeteries (S), churches (S), collection stations (S), cultural facilities (A), day care centers (A), government offices (A), hospitals (S), local assembly and entertainment (A), local post office (A), local public health and safety facilities (A), membership organizations (A), publicly owned assembly and entertainment (S), public utility centers (A), regional public health and safety facilities (S), schools - kindergarten through secondary (S), social service organizations (S), pipelines and power transmission (S), transit stations and terminals (S), transportation routes (S), and transmission and receiving facilities (A).

Recreation

Day use areas (A), cross country skiing courses (S), outdoor recreation concessions (S), riding and hiking trails (S), snowmobile courses (A), and visitor information center (S).

Resource Management

Same as Special Area #1.

MAXIMUM DENSITIES: Pursuant to Chapter 21 DENSITY, the following list establishes the maximum allowable densities that may be permitted for any parcel located within the Plan Area. The actual development permitted may be further limited by transfer of development rights limitations, residential density incentive program, special use determinations, allocation limitations and general site development standards.

USE

MAXIMUM DENSITY

Residential

Single Family Dwelling
1 unit per parcel
Multiple Family Dwelling
15 units per acre
Employee Housing
As per the density limitations above

MAXIMUM DENSITY

Tourist Accommodation

Bed and Breakfast
10 units per acre
Hotel, Motel and other
Transient Units
- with less than 10% of units with kitchens 40 units per acre
- with 10% or more units with kitchens 15 units per acre
Timeshare (hotel/motel design) 40 units per acre

RESIDENTIAL BONUS UNITS: Pursuant to Chapter 35, the maximum number of residential bonus units which may be permitted for this Plan Area is 0 units.

MAXIMUM COMMUNITY NOISE EQUIVALENT LEVEL: The maximum community noise equivalent level for this Special Plan Area #2 is 65 CNEL, and for Special Area #1 it is 60 CNEL.

ADDITIONAL DEVELOPED OUTDOOR RECREATION: The following are the targets and limits for additional developed outdoor recreation facilities specified in Chapter 13 to be located within this Plan Area. Specific projects and their timing are addressed in the TRPA Five-Year Recreation Program pursuant to Chapter 33 Allocation of Development. The following additional capacities allowed are measured in persons at one time:

SUMMER DAY USES 0 PAOT WINTER DAY USE 0 PAOT OVERNIGHT USES 0 PAOT

IMPROVEMENT PROGRAMS: The capital improvement and other improvement programs required by the Regional Goals and Policies Plan for this area shall be implemented. The improvements include the following:

1. Improvements required by Volume IV of the Surface Water Quality Management Plan, as shown on Figure VIII-1 through 18 of Volume I of the 266 Water Quality Plan.

2. The highway and transit improvements indicated in the Transportation Element of the Regional Goals and Policies Plan.

3. Stream zone restoration as indicated in Volume III of the Water Quality Management Plan, Stream Environment-Zone Restoration Program. (To be completed.)
009B -- DOLLAR HILL

PLAN DESIGNATION:

Land Use Classification: COMMERCIAL/PUBLIC SERVICE
Management Strategy: MITIGATION
Special Designation: TDR RECEIVING AREA FOR:

1. Existing Development

SCENIC RESTORATION AREA
PREFERRED AFFORDABLE HOUSING AREA
(Senior Citizen Only)

DESCRIPTION:

Location: This is the commercial area at the Highway 28/Fabian Way intersection in the Dollar Point area and is located on TRPA map D-6.

Existing Uses: The area consists of local oriented commercial uses and larger undeveloped parcels. The area is approximately 15 percent built out with office and retail uses. This Plan Area is surrounded by residential/school uses.

Existing Environment: The Dollar Hill area is low hazard with a low percentage of land coverage and disturbance.

PLANNING STATEMENT: This area should continue to be a neighborhood oriented commercial area.

PLANNING CONSIDERATIONS:

1. The area has a winter traffic problem on Dollar Hill which would be aggravated by the addition of traffic controls at the top of Dollar Hill. Summer traffic is also heavy in this area as the only passage through this area is Highway 28.

2. Scenic Roadway Unit 16 is within this Plan Area and is targeted for scenic restoration as required by the scenic threshold.

SPECIAL POLICIES:

1. The uses permitted along Highway 28 should be compatible with the visual sensitivity of the area.

2: Placer County and the Tahoe City Advisory Council, in cooperation with TRPA, have commenced a general plan review of the areas included in Plan Areas 001A, 001B, 002, 003, 004, 005, 006, 007, 008, 009A, 009B, 010, 011, 012, 171, 172, 173 and 174. Until that general plan process has been completed the Plan Areas designated 001A, 001B, and 009A have been designated preliminary Community Plan areas. However, it is the intent of TRPA that an indepth
examination of the entire area be undertaken during the general plan process to determine the final areas that shall be subject to Community Plan incentives, and establish the final boundaries of Community Plan areas, as well as to develop other relevant planning considerations. Proposals for inclusion of any significant additional areas within Community Plan boundaries shall demonstrate compliance with the criteria for such inclusion set forth in the Code of Ordinances.

3. A large commercial project is under consideration for development within this Plan Area. Evaluation of proposals for this or other similar commercial development shall await completion of the planning process described in Policy #2 above, unless it is allowed as consistent with the rules applicable to areas not within Community Plans.

2. Senior housing should be considered and encouraged as an alternative to commercial use for this area.

5. Tourist accommodation facilities should not be considered for this area.

3. Strip commercial development in this area should be discouraged.

PERMISSIBLE USES: Pursuant to Chapter 18 PERMISSIBLE USES and if applicable, Chapter 51 PERMISSIBLE USES AND ACCESSORY STRUCTURES IN THE SHOREZONE AND LAKEZONE, the following primary uses may be permitted within all or a portion of the Plan Area. The list indicates if the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed shall be considered nonconforming uses within this Plan Area. The establishment of new uses not listed shall be prohibited within this Plan Area.

General List: The following list of permissible uses is applicable throughout the Plan Area.

Residential

Multiple family dwelling (S), nursing and personal care (S), residential care (S), and single family dwelling (S).

Commercial

Eating and drinking places (A), food and beverage retail sales (A), furniture, home furnishings and equipment (S), general merchandise stores (A), nursery (A), outdoor retail sales (S), service stations (S), privately owned assembly and entertainment (S), broadcasting studios (A), financial services (A), health care services (A), personal services (A), professional offices (A), schools - pre-schools (S), secondary storage (S), and small scale manufacturing (S).

Public Service

Cemeteries (S), churches (A), cultural facilities (A), day care centers (A), government offices (A), local assembly and entertainment (A), local post office (A), local public health and safety facilities (A), membership organizations (S), publicly owned assembly and entertainment (S), public utility centers (S), schools - kindergarten through secondary (S), social service organizations (S), pipelines and power transmission (S), transit stations and terminals (S), transportation routes (S), and transmission and receiving facilities (S).

Recreation

Day use areas (A), participant sports facilities (A), cross country skiing courses (S), outdoor recreation concessions (S), riding and hiking trails (S), and rural sports (S).

Resource Management

Reforestation (A), sanitation salvage cut (A), thinning (A), tree
farms (A), early successional stage vegetation management (A), nonstructural fish habitat management (A), nonstructural wildlife habitat management (A), structural fish habitat management (A), structural wildlife habitat management (A), fire detection and suppression (A), fuels treatment (A), insect and disease suppression (A), sensitive plant management (A), uncommon plant community management (A), erosion control (A), runoff control (A), and SEZ restoration (A).

**MAXIMUM DENSITIES:** Pursuant to Chapter 21 DENSITY, the following list establishes the maximum allowable densities that may be permitted for any parcel located within the Plan Area. The actual development permitted may be further limited by transfer of development rights limitations, residential density incentive program, special use determinations, allocation limitations and general site development standards.

<table>
<thead>
<tr>
<th>USE</th>
<th>MAXIMUM DENSITY</th>
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</thead>
<tbody>
<tr>
<td>Residential</td>
<td></td>
</tr>
<tr>
<td>Single Family Dwelling</td>
<td>1 unit per parcel</td>
</tr>
<tr>
<td>Multiple Family Dwelling</td>
<td>15 units per acre</td>
</tr>
<tr>
<td>Nursing and Personal Care</td>
<td>25 people per acre</td>
</tr>
<tr>
<td>Residential Care</td>
<td>25 people per acre</td>
</tr>
</tbody>
</table>

**RESIDENTIAL BONUS UNITS:** Pursuant to Chapter 35, the maximum number of residential bonus units which may be permitted for this Plan Area is 0 units.

**MAXIMUM COMMUNITY NOISE EQUIVALENT LEVEL:** The maximum community noise equivalent level for this Plan Area is 60 CNEL. The maximum community noise equivalent level for the Highway 28 corridor is 60 CNEL.

**ADDITIONAL DEVELOPED OUTDOOR RECREATION:** The following are the targets and limits for additional developed outdoor recreation facilities specified in Chapter 13 to be located within this Plan Area. Specific projects and their timing are addressed in the TRPA Five-Year Recreation Program pursuant to Chapter 33 Allocation of Development. The following additional capacities allowed are measured in persons at one time:

- **SUMMER DAY USES 0 PAOT**
- **WINTER DAY USE 0 PAOT**
- **OVERNIGHT USES 0 PAOT**

**IMPROVEMENT PROGRAMS:** The capital improvement and other improvement programs required by the Regional Goals and Policies Plan for this area shall be implemented. The improvements include the following:

1. Improvements required by Volume IV of the Surface-Water Quality Management Plan, as shown on Figure VIII-1 through 18 of Volume I of the 2005 Water Quality Plan.

2. The highway and transit improvements indicated in the Transportation Element of the Regional Goals and Policies Plan.
3. Stream zone restoration as indicated in Volume III of Water Quality Management Plan, Stream Environment-Zone Restoration Program. (To be completed.)

4. The scenic restoration and landscaping improvements indicated in the restoration plan for the Highway 28 corridor. (To be completed.)
010 -- DOLLAR POINT

DESIGNATION:

Land Use Classification  RESIDENTIAL
Management Strategy  MITIGATION
Special Designation  SCENIC RESTORATION AREA

DESCRIPTION:

Location: This area includes the Dollar Point Subdivision and surrounding condominium developments and can be located on TRPA map D-6.

Existing Uses: The subdivision is a newer low density residential area and the condominiums have been constructed recently at medium density. The extensive shoreline is limited to private use. This area is 85 percent built out.

Existing Environment: 55 percent of the lands are classified low hazard and 35 percent are moderate hazard with small amounts of high hazard and SEZ lands. The shoreline is classified as tolerance districts 4 and 2 and as prime fish habitat. The land coverage is 25 percent plus an additional 20 percent disturbed. The subdivision does not meet all BMP standards. Improvements have been made in the sewer line shorezone erosion problems by the homeowners and the Public Utility District.

PLANNING STATEMENT: This area should continue as a residential area of the same type and character.

PLANNING CONSIDERATIONS:

1. The shoreline exhibits some erosion problems, and a portion of this area is tentatively targeted for habitat improvement.

2. Highway 28 in this area contains some large, unstabilized cut slopes.

3. Scenic Roadway Unit 16 and Scenic Shoreline Unit 16 are within this Plan Area. Both units are targeted for scenic restoration as required by the scenic threshold.

SPECIAL POLICIES:

1. The cuts along the highway should be stabilized.

2. The subdivision should be upgraded to current BMP standards.

3. Placer County and the Tahoe City Advisory Council, in cooperation with TRPA, have commenced a general plan review of the areas included in Plan Areas 001A, 001B, 002, 003, 004, 005, 006, 007, 008, 009A, 009B, 010, 011, 012, 171, 172, 173 and 174. Until that general plan process has been completed the Plan Areas designated 001A, 001B, and 009A have been designated preliminary Community Plan areas. However, it is the intent of TRPA that an incipient examination of the entire area be undertaken during the general plan process to determine the final areas that shall be subject to Community Plan incentives, and establish the final boun-
daries of Community Plan areas, as well as to develop other relevant planning considerations. Proposals for inclusion of any significant additional areas within Community Plan boundaries shall demonstrate compliance with the criteria for such inclusion set forth in the Code of Ordinances.

**PERMISSIBLE USES:** Pursuant to Chapter 18 PERMISSIBLE USES and if applicable, Chapter 51 PERMISSIBLE USES AND ACCESSORY STRUCTURES IN THE SHOREZONE AND LAKEZONE, the following primary uses may be permitted within all or a portion of the Plan Area. The list indicates if the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed shall be considered nonconforming uses within this Plan Area. The establishment of new uses not listed shall be prohibited within this Plan Area.

**General List:** The following list of permissible uses is applicable throughout the Plan Area:

**Residential**
- Single family house dwelling (A).

**Public Service**
- Local public health and safety facilities (S), transit stations and terminals (S), pipelines and power transmission (S), transmission and receiving facilities (S), transportation routes (S), public utility centers (S), churches (S), local post offices (S), and day care centers (S).

**Recreation**
- Participant sports facilities (S), day use areas (A), riding and hiking trails (A), and beach recreation (A).

**Resource Management**
- Reforestation (A), sanitation salvage cut (A), special cut (A), thinning (A), early successional stage vegetation management (A), structural and nonstructural fish/wildlife habitat management (A), fire detection and suppression (A), fuels treatment/management (A), insect and disease suppression (A), sensitive and uncommon plant management (A), erosion control (A), SEZ restoration (A), and runoff control (A).

**Shorezone:** Within the specified shorezone tolerance district, the following primary uses may be permitted in the backshore, nearshore, and foreshore. Accessory structures shall be regulated pursuant to the regulations applicable to the primary use upon which they are dependent in accordance with Chapter 18. The following structures may be permitted in the shorezone as an allowed (A) or special (S) use only if they are accessory to an existing, allowed use located on the same or adjoining littoral parcel.

**Tolerance District 2**

**Primary Uses**
- Safety and navigational devices (A) and salvage operations (A).

**Accessory Structure**
- Buoys (A), piers (A), fences (S), boat ramps (S), breakwaters or jetties (S), shoreline protective structures (S), floating docks and platforms (A), and water intake lines (S).

**Tolerance District 4**

**Primary Uses**
- Beach recreation (A), safety and navigational devices (A), and salvage operations (A).
Accessory Structures: Buoys (A), piers (A), fences (S), boat ramps (S), breakwaters or jetties (S), shoreline protective structures (S), floating docks and platforms (A), and water intake lines (S).

**MAXIMUM DENSITIES:** Pursuant to Chapter 21 DENSITY, the following list establishes the maximum allowable densities that may be permitted for any parcel located within the Plan Area. The actual development permitted may be further limited by transfer of development rights limitations, residential density incentive programs, special use determinations, allocation limitations and general site development standards.

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</tr>
<tr>
<td>Single Family Dwelling</td>
<td>1 unit per parcel</td>
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</tbody>
</table>

**RESIDENTIAL BONUS UNITS:** Pursuant to Chapter 35, the maximum number of residential bonus units which may be permitted for this Plan Area is 0 units.

**MAXIMUM COMMUNITY NOISE EQUIVALENT LEVEL:** The maximum community noise equivalent level for this Plan Area is 50 CNEL. The maximum community noise equivalent level for the Highway 28 corridor is 55 CNEL.

**ADDITIONAL DEVELOPED OUTDOOR RECREATION:** The following are the targets and limits for additional developed outdoor recreation facilities specified in Chapter 13 to be located within this Plan Area. Specific projects and their timing are addressed in the TRPA Five-Year Recreation Program pursuant to Chapter 33 Allocation of Development. The following additional capacities allowed are measured in persons at one time:

- SUMMER DAY USES 0 PAOT
- WINTER DAY USE 0 PAOT
- OVERNIGHT USES 0 PAOT

**IMPROVEMENT PROGRAMS:** The capital improvement and other improvement programs required by the Regional Goals and Policies Plan for this area shall be implemented. The improvements include, but are not limited to, the following:

1. Improvements required by Volume IV of the Surface Water Quality Management Plan, as shown on Figure VIII-1 through 18 of Volume I of the 2002 Water Quality Plan.

2. The highway and transit improvements indicated in the Transportation Element of the Regional Goals and Policies Plan.

3. Stream zone restoration as indicated in Volume III of the Water Quality Management Plan, the Stream Environment Zone Restoration Program. (To be completed.)

4. The scenic restoration and landscaping improvements indicated in the Scenic Quality Implementation Program for the Highway 89 corridor. (To be completed.)
011 -- HIGHLANDS

PLAN DESIGNATION:

Land Use Classification          RESIDENTIAL
Management Strategy              MITIGATION
Special Designation              NONE

DESCRIPTION:

Location: This area is located north of Highway 28 in the Dollar Point area and can be found on TRPA map D-6.

Existing Use: The area is a low density single family residential subdivision and is 75 percent built out. Highlands Community Center is also located within this Plan Area.

Existing Environment: The lands are classified as low hazard except for a small amount of SEZ. Land coverage is 10 percent plus an additional 20 percent disturbed.

PLANNING STATEMENT: This area should continue as residential, maintaining the existing character and single family dwelling density.

PLANNING CONSIDERATIONS:

1. Some areas of the subdivision do not meet all BMP standards.

SPECIAL POLICIES:

1. The subdivision should be brought up to current BMP standards as build-out continues.

2. Placer County and the Tahoe City Advisory Council, in cooperation with TRPA, have commenced a general plan review of the areas included in Plan Areas 001A, 001B, 002, 003, 004, 005, 006, 007, 008, 009A, 009B, 010, 011, 012, 171, 172, 173 and 174. Until that general plan process has been completed the Plan Areas designated 001A, 001B, and 009A have been designated preliminary Community Plan areas. However, it is the intent of TRPA that an indepth examination of the entire area be undertaken during the general plan process to determine the final areas that shall be subject to Community Plan incentives, and establish the final boundaries of Community Plan areas, as well as to develop other relevant planning considerations. Proposals for inclusion of any significant additional areas within Community Plan boundaries shall demonstrate compliance with the criteria for such inclusion set forth in the Code of Ordinances.

2. Existing multiple family dwellings shall be conforming; however, there shall not be any additional multiple family dwellings in the Plan Area.

PERMISSIBLE USES: Pursuant to Chapter 18 PERMISSIBLE USES and if applicable, Chapter 51 PERMISSIBLE USES AND ACCESSORY STRUCTURES IN THE SHOREZONE AND LAKEZONE, the following primary uses may be permitted within all or a portion of the Plan Area. The list indicates if the use is
allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed shall be considered nonconforming uses within this Plan Area. The establishment of new uses not listed shall be prohibited within this Plan Area.

**General List:** The following list of permissible uses is applicable throughout the Plan Area:

**Residential**
- Single family dwelling (A), and multiple family dwelling (S).

**Public Service**
- Local public health and safety facilities (S), transit stations and terminals (S), pipelines and power transmission (S), transmission and receiving facilities (S), transportation routes (S), public utility centers (S), churches (S), local post offices (S), and day care centers (S).

**Recreation**
- Participant sports facilities (S), day use areas (A), and riding and hiking trails (A), sports assembly (S), cross country ski courses (A), snowmobile courses (S), and outdoor recreation concessions (A).

**Resource Management**
- Reforestation (A), sanitation salvage cut (A), special cut (A), thinning (A), early successional stage vegetation management (A), structural and nonstructural fish/wildlife habitat management (A), fire detection and suppression (A), fuels treatment/management (A), insect and disease suppression (A), sensitive and uncommon plant management (A), erosion control (A), SEZ restoration (A), and runoff control (A).

**MAXIMUM DENSITIES:** Pursuant to Chapter 21 DENSITY, the following list establishes the maximum allowable densities that may be permitted for any parcel located within the Plan Area. The actual development permitted may be further limited by transfer of development rights limitations, residential density incentive programs, special use determinations, allocation limitations and general site development standards.

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<tr>
<td>Single Family Dwelling</td>
<td>1 unit per parcel</td>
</tr>
<tr>
<td>Multiple Family Dwelling</td>
<td>15 units per acre</td>
</tr>
</tbody>
</table>

**RESIDENTIAL BONUS UNITS:** Pursuant to Chapter 35, the maximum number of residential bonus units which may be permitted for this Plan Area is 0 units.

**MAXIMUM COMMUNITY NOISE EQUIVALENT LEVEL:** The maximum community noise equivalent level for this Plan Area is 50 CNEL.

**ADDITIONAL DEVELOPED OUTDOOR RECREATION:** The following are the targets and limits for additional developed outdoor recreation facilities specified in Chapter 13 to be located within this Plan Area. Specific projects and their timing are addressed in the TRPA Five-Year Recreation Program pursuant to Chapter 33 Allocation of Development. The following additional capacities allowed are measured in persons at one time:

- **SUMMER DAY USES 0 PAOT**
- **WINTER DAY USE 0 PAOT**
- **OVERNIGHT USES 0 PAOT**
IMPROVEMENT PROGRAMS: The capital improvement and other improvement programs required by the Regional Goals and Policies Plan for this area shall be implemented. The improvements include, but are not limited to, the following:

1. Improvements required by Volume IV of the Surface Water Quality Management Plan as shown on Figure VIII-1 through 18 of Volume I of the 208 Water Quality Plan.

2. The highway and transit improvements indicated in the Transportation Element of the Regional Goals and Policies Plan.

012 -- NORTH TAHOE HIGH SCHOOL

PLAN DESIGNATION:

- **Land Use Classification**: RECREATION
- **Management Strategy**: MITIGATION
- **Special Designation**: TDR RECEIVING AREA FOR:
  1. Existing Developments

DESCRIPTION:

**Location**: This Plan Area includes the area in and around the high school site in the Highlands area near Dollar Point and can be located on TRPA maps C-5, C-6, D-5 and D-6.

**Existing Uses**: Recreational facilities in this area include tennis courts, a softball field, a soccer field, and a nordic ski center. The TCPUD helps with the maintenance of the school facilities and leases the highlands area to a concessionaire who operates the nordic center for winter cross country skiers. The remaining area is undeveloped land fronting Highway 28.

**Existing Environment**: This area is mostly covered by mixed conifer fir with mountain whitebark as the predominate understory vegetation. Developed areas are mostly associated with the high school site and several openings that were cut to accommodate a proposed golf course. Most of the area is classified as low to moderate hazard.

PLANNING STATEMENT:

This area should continue to provide developed recreational facilities for the local residents.

PLANNING CONSIDERATIONS:

1. Off-road vehicle use is a problem.
2. This Plan Area may provide an alternative site for recreation or residential facilities now located in SEZs or other unsuitable areas.
3. Scenic Roadway Unit 16 is within this Plan Area.

SPECIAL POLICIES:

1. Continue to provide winter recreational opportunities for cross country skiers.
2. A secondary access to the high school should be considered.
3. Off-road vehicle use should be discouraged.
4. Consider this area as a preferred site for relocating recreation and residential facilities now located in stream environment zones or other unsuitable areas.
5. Placer County and the Tahoe City Advisory Council, in cooperation with TRPA, have commenced a general plan review of the areas included in Plan Areas 001A, 001B, 002, 003, 004, 005, 006, 007, 008, 009A, 009B, 010, 011, 012, 171, 172, 173 and 174. Until that general plan process has been completed, the Plan Areas designated 001A, 001B, and 009A have been designated preliminary Community Plan areas. However, it is the intent of TRPA that an in-depth examination of the entire area be undertaken during the general plan process to determine the final areas that shall be subject to Community Plan incentives, and establish the final boundaries of Community Plan areas, as well as to develop other relevant planning considerations. Proposals for inclusion of any significant additional areas within Community Plan boundaries shall demonstrate compliance with the criteria for such inclusion set forth in the Code of Ordinances.

5. This Plan Area should accommodate the connection of the North Tahoe PUD Bike Trail.

6. Intensive public uses should be confined to Special Area #1 which abuts PAS 009B and fronts on Highway 28. This Special Area should also be considered in conjunction with any Community Planning nearby.

6. Special Area #1 has been created as a receiving area for public service facilities. The area may be developed in such a way as to be visibly screened from adjacent neighborhoods and state route 28 and not exceed established CNEL.

PERMISSIBLE USES:

Pursuant to Chapter 18 PERMISSIBLE USES and if applicable, Chapter 51 PERMISSIBLE USES AND ACCESSORY STRUCTURES IN THE SHOREZONE AND LAKEZONE, the following primary uses may be permitted within all or a portion of the Plan Area. The list indicates if the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed shall be considered nonconforming uses within this Plan Area. The establishment of new uses not listed shall be prohibited within this Plan Area.

General List: The following list of permissible uses is applicable throughout the Plan Area.

Residential
- Single family dwelling (S).

Public Service
- Churches (S), cultural facilities (S), pipelines and power transmission (S), public utility centers (S), transmission and receiving facilities (S), transportation routes (S), cemeteries (S), membership organizations (S), schools - kindergarten through secondary (S), and transit stations and terminals (S).

Recreation
- Cross country skiing courses (S), day use areas (A), riding and hiking trails (S), undeveloped campgrounds (A), participant sports (S), developed campgrounds (A), outdoor recreation concessions (S), rural sports (S), group facilities (S), snowmobile courses (S), and recreation centers (S).

Resource
- Reforestation (A), sanitation salvage cut (A), Management selection cut (S), special cut (S), thinning (A), early successional stage vegetation management (A), nonstructural fish habitat management (A), nonstructural wildlife habitat management (A), structural fish habitat management (S), structural wildlife habitat management (S), fire detection and suppression (A), fuels treatment (S), insect and disease suppression (A), uncommon plant community management.
Special Area #1: The following list of permissible uses is applicable in Special Area #1.

All the uses listed on the General List plus the following additions:

**Public Service**
- Publicly owned assembly and entertainment (S), regional public health and safety (S), and government offices (S).

**MAXIMUM DENSITIES:** Pursuant to Chapter 21 DENSITY, the following list establishes the maximum allowable densities that may be permitted for any parcel located within the Plan Area. The actual development permitted may be further limited by transfer of development rights limitations, residential density incentive program, special use determinations, allocation limitations and general site development standards.

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</tr>
<tr>
<td>Single Family Dwelling</td>
<td>1 unit per parcel</td>
</tr>
<tr>
<td>Recreation</td>
<td></td>
</tr>
<tr>
<td>Developed Campgrounds</td>
<td>8 sites per acre</td>
</tr>
<tr>
<td>Group Facilities</td>
<td>25 persons per acre</td>
</tr>
</tbody>
</table>

**MAXIMUM COMMUNITY NOISE EQUIVALENT LEVEL:** The maximum community noise equivalent level for this Plan Area is 55 CNEL.

**ADDITIONAL DEVELOPED OUTDOOR RECREATION:** The following are the targets and limits for additional developed outdoor recreation facilities specified in Chapter 13 to be located within this Plan Area. Specific projects and their timing are addressed in the TRPA Five-Year Recreation Program pursuant to Chapter 33 Allocation of Development. The following additional capacities allowed are measured in persons at one time:

- **SUMMER DAY USES 0 PAOT**
- **WINTER DAY USE 0 PAOT**
- **OVERNIGHT USES 0 PAOT**

**IMPROVEMENT PROGRAMS:** The capital improvement and other improvement programs required by the Regional Goals and Policies Plan for this area shall be implemented. The improvements include, but are not limited to, the following:

1. Improvements required by Volume IV of the Surface Water Quality Management Plan as shown on Figure VIII-1 through 18 of Volume 1 of the 203 Water Quality Plan.
2. The highway and transit improvements indicated in the Transportation Element of the Regional Goals and Policies Plan.
171 -- TAVERNS HEIGHTS

PLAN DESIGNATION:

Land Use Classification: RESIDENTIAL
Management Strategy: MITIGATION
Special Designation: SCENIC RESTORATION AREA
TDR RECEIVING AREA

DESCRIPTION:

Location: This is the residential area along Highway 89 between Sunnyside Resort and Tahoe City and can be located on TRPA maps C-7 and C-8.

Existing Uses: Tavern Heights is a mixture of residential uses ranging from medium density condominiums to large estates. The shoreline is in private ownership. The area is 85 percent built out.

Existing Environment: This area is 90 percent low hazard. The shoreline is classified as tolerance district 7. Approximately 20 percent of the area has been covered with impervious surfaces and an additional 20 percent has been disturbed.

PLANNING STATEMENT: This area should continue to be residential, maintaining the existing character of the neighborhood.

PLANNING CONSIDERATIONS:

1. Most of the piers in this area are extremely long due to shallow water.
2. The prime fish habitat in Lake Tahoe is tentatively identified for habitat restoration.
3. Scenic Roadway Unit 14 and Scenic Shoreline Unit 14 are within this Plan Area. The roadway unit is targeted for scenic restoration as required by the scenic threshold.

SPECIAL POLICIES:

1. The two churches and their facilities, as they exist upon the adoption of this Plan Area, are considered allowed uses.
2. Placer County and the Tahoe City Advisory Council, in cooperation with TRPA, have commenced a general plan review of the areas included in Plan Areas 001A, 001B, 002, 003, 004, 005, 006, 007, 008, 009A, 009B, 010, 011, 012, 171, 172, 173 and 174. Until that general plan process has been completed, the Plan Areas designated 001A, 001B, and 009A have been designated preliminary Community Plan areas. However, it is the intent of TRPA that an indepth examination of the entire area be undertaken during the general plan process to determine the final areas that shall be subject to Community Plan incentives, and establish the final boundaries of Community Plan areas, as well as to develop other relevant planning considerations. Proposals for inclusion of any significant additional areas within Community Plan boundaries should be made to the Placer County General Plan Commission for review and approval.
shall demonstrate compliance with the criteria for such inclusion set forth in the Code of Ordinances.

2. Special Area #1 is designated for multi-residential use.

PERMISSIBLE USES: Pursuant to Chapter 18 PERMISSIBLE USES and if applicable, Chapter 51 PERMISSIBLE USES AND ACCESSORY STRUCTURES IN THE SHOREZONE AND LAKEZONE, the following primary uses may be permitted within all or a portion of the Plan Area. The list indicates if the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed shall be considered nonconforming uses within this Plan Area. The establishment of new uses not listed shall be prohibited within this Plan Area.

**General List:** The following list of permissible uses is applicable throughout the Plan Area:

- **Residential**
  - Single family dwelling (A), multi-family dwellings (SA #1 only) (S).

- **Tourist Accommodation**
  - Bed and breakfast facilities (S).

- **Public Service**
  - Local public health and safety facilities (S), transit stations and terminals (S), pipelines and power transmission (S), transmission and receiving facilities (S), transportation routes (S), public utility centers (S), and day care centers (S).

- **Recreation**
  - Participant sports facilities (S), day use areas (A), riding and hiking trails (A), and beach recreation (A).

- **Resource Management**
  - Reforestation (A), sanitation salvage cut (A), special cut (A), thinning (A), early successional stage vegetation management (A), structural and nonstructural fish/wildlife habitat management (A), fire detection and suppression (A), fuels treatment/management (A), insect and disease suppression (A), sensitive and uncommon plant management (A), erosion control (A), SEZ restoration (A), and runoff control (A).

**Shorezone:** Within the specified shorezone tolerance district, the following primary uses may be permitted in the backshore, nearshore, and foreshore. Accessory structures shall be regulated pursuant to the regulations applicable to the primary use upon which they are dependent in accordance with Chapter 18. The following structures may be permitted in the shorezone as an allowed (A) or special (S) use only if they are accessory to an existing, allowed use located on the same or adjoining littoral parcel.

**Tolerance District 7**

- **Primary Uses**
  - Beach recreation (A), safety and navigational devices (A), and salvage operations (A).

- **Accessory Structures**
  - Buoy (A), piers (A), fences (S), boat ramps (S), breakwaters or jetties (S), floating docks and platforms, shoreline protective structures (S), and water intake lines (S).

PERMISSIBLE USES: Pursuant to Chapter 18 PERMISSIBLE USES and if applicable, Chapter 51 PERMISSIBLE USES AND ACCESSORY STRUCTURES IN THE SHOREZONE AND LAKEZONE, the following primary uses may be permitted within all or a portion of the Plan Area. The list indicates if the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed shall be considered nonconforming uses within this Plan Area. The establishment of new uses not listed shall be
prohibited within this Plan Area.

<table>
<thead>
<tr>
<th>USE</th>
<th>MAXIMUM DENSITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td></td>
</tr>
<tr>
<td>Single Family Dwelling</td>
<td>1 unit per parcel</td>
</tr>
<tr>
<td>Multi-Family Dwelling</td>
<td>8 units per acre</td>
</tr>
<tr>
<td>Tourist Accommodation</td>
<td></td>
</tr>
<tr>
<td>Bed and Breakfast Facilities</td>
<td>8 units per acre</td>
</tr>
</tbody>
</table>

**RESIDENTIAL BONUS UNITS:** Pursuant to Chapter 35, the maximum number of residential bonus units which may be permitted for this Plan Area is 0 units.

**MAXIMUM COMMUNITY NOISE EQUIVALENT LEVEL:** The maximum community noise equivalent level for this Plan Area, including the Highway 89 corridor, is 55 CNEL.

**ADDITIONAL DEVELOPED OUTDOOR RECREATION:** The following are the targets and limits for additional developed outdoor recreation facilities specified in Chapter 13 to be located within this Plan Area. Specific projects and their timing are addressed in the TRPA Five-Year Recreation Program pursuant to Chapter 33 Allocation of Development. The following additional capacities allowed are measured in persons at one time:

- SUMMER DAY USES 0 PAOT
- WINTER DAY USE 0 PAOT
- OVERNIGHT USES 0 PAOT

**IMPROVEMENT PROGRAMS:** The capital improvement and other improvement programs required by the Regional Goals and Policies Plan for this area shall be implemented. The improvements include, but are not limited to, the following:

1. Improvements required by Volume IV of the Surface Water Quality Management Plan, as shown on Figure VIII-1 through 18 of Volume I of the 2008 Water Quality Plan.
2. The highway and transit improvements indicated in the Transportation Element of the Regional Goals and Policies Plan.
3. Stream zone restoration as indicated in Volume III of the Water Quality Management Plan, Stream Environment Zone Restoration Program. (To be completed.)
4. The scenic restoration and landscaping improvements indicated in the Scenic Quality Implementation Program for the Highway 89 corridor. (To be completed.)
MEMORANDUM

June 4, 1991

To: Advisory Planning Commission

From: Agency Staff

Subject: Man-Modified Assessment, Payless Site; APN 94-190-22 & 26, State Highway 89, Tahoe City, California

BACKGROUND

Pursuant to the direction of the Advisory Planning Commission at its May 1991 meeting, Agency staff has prepared the following Man-Modified assessment of the 3.7 acre Payless site in Tahoe City. Special Policy #7 of the Tahoe City Planning Area statement (PAS 001A) states that TRPA will assist with a study of the entire community plan area to identify areas that are man-modified. The land capability report prepared by Davis' Consulting Earth Scientists and their associates in 1987, is the basis of the TRPA staff determination of land capability for the Payless site. On May 28, 1991 representatives for Payless Drug Stores Northwest submitted additional information entitled "Report of Investigation of Man-Modification to Payless Site, Tahoe City, CA." for TRPA review.

The Payless site was originally identified as soil map unit Gr (Gravelly alluvial lands) in the Soil Conservation Service Tahoe Basin Area Soil Survey prepared by John H. Rodgers in 1974. The Land Capability Classification of the Lake Tahoe Basin, California and Nevada, A Guide for Planning (Bailey, 1974) assigned the lb classification to the areas mapped as the Gr soil map unit. Based on these two publications, the Land Capability Overlay Maps adopted by TRPA in 1987, show the Payless site to be land capability class 1b.

The soils investigation report and the land capability assessment for the Tahoe City Community Plan area prepared by Davis' Consulting Earth Scientists, included a specific soil profile for the Payless site. The team of experts employed by Davis' included Sid Davis, Grant Kennedy and Lawrence Welch, Soil Scientists, and C.M. Skau, Ph.D., Hydrologist. Their conclusion was that the Payless site was best classified as land capability 1b.

Pursuant to the TRPA Code of Ordinances, Subsection 20.2.F (2), (attached) and 6/4/91 /gss

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based on the findings in the Davis report, TRPA staff felt the Payless site would not qualify as a Man-Modified area since the land capability of the area had not changed from the 1b classification that was originally mapped.

In October 1987, a field crew retained by TRPA to conduct field evaluations of vacant parcels for the Individual Parcel Evaluation System (IPES) inspected the Payless site. The parcel was subject to IPES evaluation since single family residential development could be allowed as a special use. The IPES field evaluation found the soils to be compacted fill material, sampled to a depth of only 9 inches. The slopes were measured at 1% gradient with poor vegetative cover. The soils analysis was incorrectly done since the criteria for soils interpretation requires the soils be analyzed to a depth of at least 20 inches, and in most cases more appropriately analyzed to at least 40 inches. Since the soils were only analyzed to 9 inches there was no way for the team to determine if there was evidence of a water table at less than 20 inches. Evidence of a water table at less than 20 inches is a primary indicator of stream environment zone (SEZ) areas. The soil investigation report prepared by Davis was not available to the IPES field team at the time of their evaluation. The results of the IPES evaluation were mailed to the owners of record (PNW, Inc., 9275 SW Peyton Lane, Wilsonville, OR 97070) during the spring of 1988, with the final IPES score of 843 being mailed on February 10, 1989. The error in the soil evaluation procedure was not discovered by TRPA until the information was presented by the Payless representatives at the May 1991 APC meeting. The owners of the Payless property did not request reevaluation of their IPES score nor did they file an appeal of the IPES score for parcel 94-190-26.

The report submitted by representatives for Payless Drug Stores Northwest has information which they felt should be included in a Man-Modified report for the Payless site. The key components of this report were the soils, hydrology and vegetation assessments, conducted by Grant Kennedy and John H. Rodgers, Soil Scientists, C. M. Skau, Ph.D., Hydrologist and Linda Nelson, Botanical Resource Consultant. The findings and conclusions made by this group in their May 1991 report now find the Payless site to be best classified as land capability class 5 and 1b.

This report included previous land capability assessment reports prepared by teams of experts hired by Payless Drug Stores and the California TRPA (CTRPA) back in 1979 and 1980. The findings and conclusions of those teams were similar to the current information. The team of experts hired by Payless found the entire site to be best classified as land capability class 5, while the team of experts retained by CTRPA found the site to best classified as land capability 1b. The CTRPA Governing Board passed and adopted Resolution 82-1 on January 8, 1982, which by consent of both Payless and CTRPA took no action on the application to reclassify the land capability of property, but did exempt the site from the Regional Plan as a substantially altered environment.
The bulk of the Payless report is made up of information and pictures relating to and depicting the previous uses, modifications, and physical state of the property for the past 130 years.

STREAM ENVIRONMENT ZONE CRITERIA

The land capability overlay maps adopted in 1987 depicted areas of SEZ pursuant to the criteria set forth in the Lake Tahoe Basin Water Quality Management Plan (TRPA 1978) and labeled these SEZ areas as land capability class 1b.

The SEZ criteria set forth in the TRPA Code of Ordinances, Subsection 37.3 adopted in June 1987 for vacant single family parcels, was incorporated into the Water Quality Management Plan for the Lake Tahoe Region (TRPA 1988). Upon adoption of the Water Quality Management Plan in February 1989, the SEZ criteria referenced in Chapter 37 became the criteria for determination of SEZ areas for all lands in the Lake Tahoe Region.

The Land Capability Classification 1b is assigned to all areas exhibiting the characteristics of an SEZ as defined in the Water Quality Management Plan for the Lake Tahoe Region (TRPA 1988). The reports prepared by the Payless consultants incorrectly refer to the definition of land capability class 1b from the original 1974 Land Capability Classification Guide, which has now been amended twice by TRPA and is no longer applicable for the determination of SEZ areas.

REPORT

The following analyses are provided to complete the man-modified report:

(a) Geomorphic Characteristics - The Geomorphic Analysis of the Lake Tahoe Basin Bailey, 1974) maps this area as geomorphic unit E-3 (Alluvial Lands). This geomorphic unit is classified as high hazard land. The soils and land capability identified on the parcel in the Davis report are consistent with the mapped geomorphic hazard rating. The soils identified in the Payless consultants' report are inconsistent with the mapped geomorphic classification. The Kennedy report identifies this area as geomorphic unit E-2 (Outwash, Till and Lake Deposits).

(b) Surface and Subsurface Hydrology - Surface water on the Payless site is described in detail in the Skau report. This information appears to be an accurate assessment of the surface water resource. Much of the surface water is a result of drainage from upslope areas onto the Payless site. Some of the surface water drains across the parcel and into the Truckee River via a series of ditches and culverts (see Surface Hydrology map). There is some exchange of surface flow to the near surface water table as a result of seepage from the earthen ditches. There is evidence that some of the surface flow results from a series of drains in the golf course.

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area which brings subsurface water to the drainage ditches. Often there is ponded water on the Payless site during periods of spring snow melt. This can be attributed to the poor drainage characteristics of the soils and the compacted fill material located on some areas of the site.

The parcel has evidence of a near surface seasonal water table at varying depths. Information from the "Tahoe City Urban Runoff Treatment Facility Hydrogeologic Site Investigation" (Fenske, 1990) on the depth to water in a series of 10 observation wells on the Payless site, indicates the depth of the near surface water table to ranges from 30 inches to the surface on March 23, 1990, to a range of 40 inches to 6 inches in January and May 1990. The Davis report and the Kennedy report both identify the soil mottling, an indicator of soil saturation, between 20 and 40 inches at various locations of the parcel. The mottling varied between soil pit locations, but was present in the graded and filled areas. The Kennedy report indicates there was evidence of water seeping into their soil pits at depths of 42 to 72 inches and 62 to 70 inches in October 1990. In the soils investigations conducted by Payless consultants in May, 1979, low chroma mottles were identified at 40 to 72 inches with water encountered at 60 to 72 inches.

All of the reports reviewed indicate evidence or presence of near surface water at varying depths. The observation well data, which measured actual water levels on the parcel during the spring of drought year, is strong evidence of a near surface water table for the majority of the Payless site.

(c) Physical/Chemical Soil Characteristics - The parcel is mapped as Gr (Gravelly alluvial land) on TRPA Land Capability Map C-7.

The soils reports reviewed in preparation of this report all vary to some degree as to the soil descriptions. The front portion of the site has fill material found at varying depths ranging from 1 to 3 inches (Urlich, 1979), 0 to 15 inches (Davis, 1987) and 6 to 30 inches (Kennedy, 1990). The soils below the fill material were described as silty clay, silty clay loam and some gravelly clay loam. These soils were evaluated to depths of 60 to 72 inches. The back portion of the site has soils which are described as silty loams overlaying lake sediments most similar to the Jabu soil series. The soils on the Payless site are characterized as being poorly drained to somewhat poorly drained. These soils were not described in the Tahoe Basin Area Soil Survey.

(d) Erosion Hazard - The Payless site has a low erosion hazard. The surface soils are coarse textured soils. Some are compacted fill, occurring on a land form which is relatively flat due to grading. The back portion of the site has some slope to it but has not experienced the amount of

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disturbance as the front and supports a good vegetative cover. Because of
the silty clays and clay loams, poor drainage characteristics, presence of
a seasonally high water table and in some areas the presence of compacted
fill material, the site has a high runoff potential.

(e) Vegetation - The vegetative report prepared by Linda Nelson is an accurate
representation of the species occurring on the Payless site. Her report
delineates the vegetative species into map units according to wetland
criteria developed and used by the U.S. Army Corps of Engineers which is
not the criteria adopted by TRPA for identification of SEZ areas.

The vegetation on the graded areas at the front of the parcel is native
and introduced grasses and weeds. The vegetation in this area is sparse
and is mostly bare ground which does not support wet meadow species at
this time. The area along and adjacent to the ditch is dominated by
native and introduced wetland species which are secondary riparian species
indicating a Wet Mesic Meadow community. The back portion of the site
which has been least disturbed and can be classified as a transition zone
with some Jeffrey pine, grasses and weeds is best classified as
Herbaceous, Wet Mesic Meadow. The ditch areas of the site are dominated
by primary riparian species and can be classified as swamp areas because
of the presence of water the majority of the year and throughout the
growing season.

(f) Land Capability District - The reports prepared by the Payless consultants
both in 1979 and now in 1990 by Grant Kennedy and C. M. Skau find the site
to have characteristics which they describe as best represented by land
capability class 5. The current report released in May 1991 does identify
some areas of the site as land capability class 1b associated with the
ditch areas. The soils investigation report prepared by Sid Davis with
the assistance of Grant Kennedy and C. M. Skau in 1987, concluded the
Payless site was best classified as land capability class 1b. The land
capability report prepared by a team of consultants retained by CTRPA in
1980, concluded the Payless site was best classified as land capability
class 1b. There are no indications that the physical characteristics of
the Payless site have changed since 1979 when the first land capability
investigations were done. The criteria for identification of SEZ areas
have changed in 1987 and the investigations done by Sid Davis and
C. M. Skau were to have been based on the newly adopted SEZ criteria.

TRPA staff has reviewed all of the information available at this time and
concludes the Payless site is still best classified as predominately land
capability class 1b. The basis of this conclusion is centered on the
evidence of a seasonal near surface water, Figure 9, 10 and 11. The
poorly drained nature of the soils coupled with the presence of secondary
riparian species in those areas which have not been least disturbed by
man’s activities and uses indicate that the site still maintains the
characteristics of a SEZ area.

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REQUIRED FINDINGS

Finding (a): The land was modified prior to February 10, 1972.

There is no question the Payless site was graded, filled, disturbed, developed by the actions and activities of man prior to 1972. The report submitted by the Payless representatives has substantial evidence of alterations to the site over the past 130 years.

Finding (b): Further development will not exacerbate the problems resulting from the modification of the land and will not adversely impact sensitive lands adjacent to or nearby the man-modified area.

The problems associated with the alterations of the Payless site are predominately related to the removal of riparian vegetation and the diversions of subsurface and surface drainage onto and through the site. TRPA staff finds that development of site with buildings, parking lots and installation of utilities would adversely affect adjacent sensitive lands and would exacerbate the problems on the site. Development would further reduce the potential for the site to reestablish riparian vegetation and would potentially increase the amount of runoff from imperious surfaces. The increased nutrient loading from parking areas and buildings would runoff into adjacent drainage systems or be introduced into the near surface water table through infiltration systems which would not provide adequate treatment before the runoff reached the adjacent Truckee River.

Based on the information available, TRPA staff does not support a finding of no impact.

Finding (c): The land no longer exhibits the characteristics of land bearing the same original land capability classification.

The original land capability of the parcel was mapped class 1b. The consultants retained by TRPA concluded the Payless site was best classified as mapped, land capability class 1b. While the TRPA staff recognizes there have been alterations to the site, disturbance and grading, the site still maintains characteristics of a wet site and still exhibits characteristics of a SEZ area which was the original land capability classification.

Consultants retained by Payless conclude the majority of the parcel is best classified as land capability class 5, with some areas of land capability class 1b in the ditch areas. The reports by Kennedy and Skau indicate they have made the determination that the site no longer exhibits the characteristics of the original land capability classification because of the modifications made to the site by man.

Based on the information provided by both teams of experts, TRPA staff does not feel there is sufficient information showing that the wet site conditions of the

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site have been substantially altered. There continues to be evidence of a seasonal near surface water table and the continued subsurface and surface drainage onto the site from areas upslope of the site.

Finding (d): Restoration of the land in question is infeasible because of factors such as the cost thereof, a more positive cost-benefit ratio would be achieved by offsite restoration. onsite restoration would cause environmental harm. restoration onsite would interfere with an existing legal use and the land is not identified for restoration by any TRPA program.

Restoration of the site to a naturally functioning SEZ does appear to be feasible. A project could be designed to remove the areas of compacted fill, reroute the drainage ditches, and establish or enhance the riparian vegetative community which could provide nutrient uptake and treatment of surface water discharges before they flow into the Truckee River. The report prepared by the CTRPA consultants also concluded the site could and should be rehabilitated to a wetland flood storage area.

At this time TRPA staff is unable to identify other available sites in the Tahoe City area which could be used to provide enhanced wetland treatment of subsurface or surface drainage.

There is insufficient information at this time to assess where onsite restoration of the Payless site would cause environmental harm.

There are no current existing uses of the site that restoration of the site to a fully functioning SEZ would interfere with. Currently the site is not in a TRPA approved restoration program, but there are pending proposals which could identify this site as a restoration project area.

Finding (e): Further development can be mitigated offsite.

At this time there is no information available which indicates the impacts associated with further development of the site could be mitigated offsite. The availability of sites suitable for creation of wetland treatment projects or reestablishment of SEZ wet meadow areas is uncertain.

Finding (f): Mitigation to offset the losses caused by the modification of the land and pertinent land capability district shall be as follows: (i) onsite and offsite mitigation. (ii) pursuant to a maintenance program, including a schedule of maintenance proposed by the owner and approved by TRPA and: (iii) collection of a security, if deemed necessary by TRPA, to guarantee mitigation.

There is potential for onsite mitigation of lost SEZ area through development of drainage control structures, ponds, wetland areas or enhancement of critical riparian vegetative communities. The lack of information relating to suitable sites of offsite mitigation projects makes it difficult to assess this finding.

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TRPA staff can only speculate at this time as to whether the owner of the site would agree to onsite and offsite mitigation and the maintenance of such mitigation projects. There was no information provided in the report prepared by the Payless representatives regarding possible onsite or offsite mitigation.

CONCLUSIONS

Agency staff has reviewed the information available relating to the land capability of the Payless site and has addressed the seven elements of the Man-Modified report and found that we cannot make all of the six required findings necessary to approve a Man-Modified determination for the Payless site.

STAFF RECOMMENDATION

Staff recommends the Advisory Planning Commission take no action on the Man-Modified report.

If there are questions or comments relating to this agenda item, please contact Gary S. Sheilhorn.
(b) Creation Of New Land Capability Districts Or Geomorphic Units: Creation of a new land capability district on the Land Capability Overlays, which new district shall be five contiguous acres or more in area, or creation of a new geomorphic unit, which new unit shall be one square mile or more in area, unless smaller, more precise mapping units are adopted by TRPA, in which event the smaller units may be used.

(6) Procedure After Amendment: Once TRPA has completed its action on an amendment to the Regional Plan pursuant to Subsection 20.2.E, it shall follow the procedure set forth in Subparagraph 20.2.C(6) as though it applied to an amendment to the Regional Plan pursuant to Subsection 20.2.E, including, but not limited to, the report prepared for and action on the amendment.

20.2.F Amendment Of Land Capability Overlays For Man-Modified Areas: The TRPA Land Capability Overlays may be amended for man-modified areas through an amendment of the Regional Plan in the manner set forth in this Subsection. The amendment may be initiated by TRPA or the owner of the pertinent land, provided there is sufficient information demonstrating a reasonable possibility the requirements of this Subsection can be met.

(1) Team Of Experts: An amendment of the Regional Plan pursuant to this Subparagraph shall be evaluated by the team of experts referred to in Subparagraph 20.2.D(1) under the conditions set forth in that Subparagraph.

(2) Man-Modified Report: The team of experts shall prepare a man-modified report analyzing the proposed plan amendment. The report shall contain information showing that the land in question was modified by man's placement of fill, dredging or grading, in so substantial a fashion as to generally exhibit the characteristics of a land capability district other than the one depicted for said land on the TRPA Land Capability Overlays. In addition to the foregoing information, the man-modified report shall contain the following concerning the pertinent land:

(a) A statement of geomorphic characteristics;
(b) An analysis of surface and subsurface hydrology;

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(c) A statement of physical and chemical soil characteristics;
(d) An analysis of erosion hazard;
(e) An analysis of vegetation;
(f) A statement identifying the land capability characteristics resulting from the modification and an opinion by the team identifying the land capability district generally exhibiting those characteristics; and
(g) Additional information reasonably required by TRPA to properly assess the merits of the application.

(3) Action on Amendment: An amendment of the Regional Plan pursuant to Subsection 20.2.F shall be processed, both procedurally and substantively, in the manner of amendments to the Regional Plan generally. The amendment may be approved if TRPA finds that:

(a) The land was modified prior to February 10, 1972;
(b) Further development will not exacerbate the problems resulting from the modification of the land and will not adversely impact sensitive lands adjacent to or nearby the man-modified area;
(c) The land no longer exhibits the characteristics of land bearing the same, original land capability classification;
(d) Restoration of the land is infeasible because of factors such as the cost thereof, a more positive cost-benefit ratio would be achieved by offsite restoration, onsite restoration would cause environmental harm, restoration onsite would interfere with an existing legal use, and the land is not identified for restoration by any TRPA program;
(e) Further development can be mitigated offsite; and
(f) Mitigation to offset the losses caused by modification of the land and pertinent land capability district, shall be as follows:

(i) Onsite and offsite mitigation;
(ii) Pursuant to a maintenance program, including schedule of maintenance, proposed by the owner and approved by TRPA; and
(iii) Collection of a security, if deemed necessary by TRPA, to guarantee mitigation.

(4) Effect Of Approval: If the amendment is approved, the land coverage limitations of the land capability district, whose characteristics are exhibited by the pertinent land, shall apply to the land.

(5) Conditions Upon Amendment: Approval of an amendment of the Regional Plan pursuant to Subsection 20.2.F may be granted subject to reasonable conditions in addition to those otherwise referred to in such Subsection.

(6) Procedure After Amendment: Once TRPA has completed its action on an amendment to the Regional Plan pursuant to Subsection 20.2.F, it shall follow the procedure set forth in Subparagraph 20.2.C(6) as though it applied to an amendment to the Regional Plan pursuant to Subsection 20.2.F, including, but not limited to, the report prepared for and action on the amendment.

20.3 Land Coverage Limitations: No person shall create land coverage in excess of the limitations set forth in this chapter. The means to determine base land coverage, the manner to transfer land coverage and prohibitions of certain land coverage are set forth in this Section.

20.3.A Base Land Coverage Requirements: The allowable base land coverage ("base coverage") shall be determined by using the coefficients set forth in the report entitled, Land Capability Classifications of the Lake Tahoe Basin, Bailey, R. G. 1974. These coefficients are:

<table>
<thead>
<tr>
<th>Lands Located In Land Capability District*</th>
<th>Base Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a, 1b, 1c</td>
<td>1%</td>
</tr>
<tr>
<td>2</td>
<td>1%</td>
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<tr>
<td>3</td>
<td>5%</td>
</tr>
<tr>
<td>4</td>
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</tr>
<tr>
<td>5</td>
<td>25%</td>
</tr>
<tr>
<td>6, 7</td>
<td>30%</td>
</tr>
</tbody>
</table>

*Lands located in Geomorphic Group I are classified land capability district 1 and are permitted one percent coverage.
37.3 **Procedure For Establishing SEZ Boundaries And Setbacks**: The IPES field evaluation teams shall use the following procedures and definitions for purposes of determining the presence and boundaries of an SEZ and establishing SEZ setbacks.

37.3.A **Definitions**: The definitions are as follows:

1. Alluvial Soils - All the following soil types owe their major characteristics to the presence of surface or subsurface water:
   a. Loamy alluvial land (Lo)
   b. Elmira loamy coarse sand, wet variant (Ev)
   c. Celio gravelly loamy coarse sand (Co)
   d. Marsh (Mh)
   e. Gravelly alluvial land (Gr)
   f. Fill land (Fd)

2. Confined - Stream types classified under major categories A and B, and stream type C2, as defined in the report entitled "A Stream Classification System," David L. Rosgen, April, 1985.

3. Designated Flood Plain - The limits of the Intermediate Regional Flood where established for creeks by the U.S. Army Corps of Engineers, or the limits of the 100-year flood where established for creeks by the U.S. Army Corps of Engineers.

4. Ephemeral Stream - Flows sporadically only in response to precipitation, with flows lasting a short time.

5. Groundwater Between 20-40 Inches - Evidence of ground water between 20 and 40 inches below the ground surface (somewhat poorly drained soil).

6. Intermittent Stream - Flows in response to precipitation or snow melt.

7. Lake - A water body greater than 20 acres in size, exceeding two meters deep at low water and lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 20 percent aerial coverage.

8. Man-Made Channel - A channel constructed by man for the purpose of conveying water or a channel created by water being discharged from a man-made source, such as a culvert or pipe.

9. Near Surface Groundwater - Evidence of ground water within 20 inches of the ground surface (poorly drained soil).

10. Perennial Stream - Permanently inundated surface stream courses. Surface water flows throughout the year except in years of infrequent drought. Perennial streams shall be those shown as solid blue lines on USGS Quad Maps, or streams determined to be perennial by TRPA.
(11) Pond - A standing water body less than 20 acres in size and/or less than two meters deep at low water.

(12) Primary Riparian Vegetation - The following vegetative community types as identified in the 1971 report entitled "Vegetation of the Lake Tahoe Region, A Guide for Planning:"

   (a) Type 0: Open water - Open water, Swamps and pools and Vernal pools.
   (b) Type 2: Herbaceous - Wet marsh or meadow and Sphagnum bog.
   (c) Type 7: Riparian shrub - Willow thicket and Alder thicket.
   (d) Type 9: Broadleaf - Low elevations.

(13) SEZ Setbacks - A strip of land adjacent to the edge of a SEZ, the designated width of which is considered the minimum width necessary to protect the integrity of the various characteristic of the SEZ. The width of the setback shall be established in accordance with the procedure set forth in Subsection 37.3.D.

(14) Secondary Riparian Vegetation - The following vegetative types as identified in the 1971 report entitled "Vegetation of the Lake Tahoe Region, A Guide for Planning:"

   (a) Type 2: Herbaceous - wet mesic meadow.
   (b) Type 9: Broadleaf - High elevations.
   (c) Type 19: Lodgepole - Wet type.

(15) Slope Condition - The condition of the slope located adjacent to the stream channel or edge of the SEZ shall be defined as follows. The extent of existing slope protection, which is defined as the percent cover of original duff layer, down logs, low growing vegetation or rock fragments greater than 1-2 inches in diameter, shall be given primary consideration when determining slope condition.

   (a) Good - Slopes show little or no evidence of surface (sheet, rill, gully) erosion or mass wasting. Slopes are typically covered 90 percent or more with original duff layer, down logs, slash, low growing vegetation or rock fragments greater than 1-2 inches in diameter. Slope gradient is commonly less than 30 percent. Soil horizons are usually cohesive and consolidated.
(b) Average - Slopes show evidence of surface (sheet, rill, gully) erosion or mass wasting over 5 to 25 percent of the slope surface. Slopes are typically covered between 50 to 90 percent with original duff layer, down logs, slash, low growing vegetation or rock fragments greater than 1-2 inches in diameter. Slope gradient is commonly between 30 and 70 percent. Soil horizons are typically moderately cohesive and consolidated.

(c) Poor - Slopes show evidence of active and pronounced surface (sheet, rill, gully) erosion or mass wasting over more than 50 percent of the slope surface. Slopes are typically covered less than 50 percent with original duff layer, down logs, slash, low growing vegetation or rock fragments greater than 1-2 inches in diameter. Slope gradient is often greater than 70 percent. Soil horizons are typically non-cohesive and unconsolidated. Evidence of seeping is often present.

(16) **Terrace** - A moderately flat land area, above the flood plain, generally less than 20 percent slope.

(17) **Unconfined** - Stream types classified under major categories C (excluding stream type C2), D and E as defined in the report entitled "A Stream Classification System," David L. Rosgen, April 1985.

**37.3.B Identification:** A stream environment zone (SEZ) shall be determined to be present if any one of the following key indicators is present or, in absence of a key indicator, if any three of the following secondary indicators are present. Plant communities shall be identified in accordance with the definitions and procedures contained in the 1971 report entitled "Vegetation of the Lake Tahoe Region, A Guide for Planning."

**1. Key Indicators:** Key indicators are:

(a) Evidence of surface water flow, including perennial, ephemeral and intermittent streams, but not including rills or man-made channels;
(b) Primary riparian vegetation;
(c) Near surface groundwater;
(d) Lakes or ponds;
(e) Beach (Be) soil; or
(f) One of the following alluvial soils:
(i) Elmira loamy coarse sand, wet variant (Ev).
(ii) Marsh (Mh).

(2) **Secondary indicators**: Secondary indicators are:

(a) Designated flood plain;
(b) Groundwater between 20 - 40 inches;
(c) Secondary riparian vegetation;
(d) One of the following alluvial soils:

(i) Loamy alluvial land (Lo);
(ii) Calico gravelly loamy coarse sand (Co); or
(iii) Gravelly alluvial land (Gr).

37.3.C **Boundaries**: The boundaries of an SEZ shall be the outermost limits of the key indicators; the outermost limits where three secondary indicators coincide; or, if Lo, Co, or Gr soils are present, the outermost limits where two secondary indicators coincide, whichever limits establish the widest SEZ at any particular point. The outermost boundaries of a stream shall be the bank full width of such stream, which shall be defined as the level of frequent high flow, i.e., the level of flood with a recurrence interval of approximately 1.5 years.

37.3.D **SEZ Setbacks**: No buildings, other structures or land coverage shall be permitted in SEZ setbacks, except in accordance with Subsection 20.4.B and the exception for the backshore set forth in Subsection 55.4.D. The restoration requirements set forth in Subparagraph 20.4.A(2)(c) shall not apply within SEZ setbacks. The allowable base land coverage within SEZ setbacks shall be in accordance with Subsection 20.3.A, and may be combined with the allowable base land coverage for the remainder of the parcel to establish a total allowable base land coverage. A portion of the total allowable base land coverage for the parcel may be used to allow construction in the SEZ setback only in accordance with Subsection 20.4.B and the exception for the backshore set forth in Subsection 55.4.D. SEZ setbacks shall be established in accordance with the following criteria (see also Section I of the Technical Appendices).

(1) **Confined Perennial Stream**: When a confined perennial stream is present, the following setbacks shall be established based on the corresponding slope condition:
POOR QUALITY ORIGINAL (S) TO FOLLOW
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September 27, 1987

Tahoe City - Lake Forest Plan Area
Soils Investigation
for
Tahoe Regional Planning Agency

Introduction:

This is a report of soils and stream environment zones in the Tahoe City area and Lake Forest plan areas. It was performed by DAVIS Consulting Earth Scientists in association with Mr. Grant M. Kennedy, Mr. Lawrence E. Welch, Soil Scientists and Dr. Clarence M. Skau, Hydrologist, at the request of the Tahoe Regional Planning Agency (TRPA) to verify Land Capability (Code of Standards, Subchapter 20) and to identify stream environment zones using two methods; (1) Those described in Chapter 3, Volume II of the Handbook of Best Management Practices; (2) Those described in Section 37.3 of the TRPA Code.

Field work for this project was conducted in August, September and October, 1987. In general the area comprises the commercial area of Tahoe City along Highway 89 and Highway 28 and in the Lake Forest area, that portion of commercial property either side of Lake Forest road, south of Lake Forest Glen Unit No. 1 (please refer to the attached maps for the exact boundary delineations).

Because of the size and complexity of the study area, the report narrative is broken into smaller areas generally divided by major roadways, streams or other land features to relate pertinent information regarding Land Capability verifications.

Procedure:

The areas were studied utilizing existing TRPA soils mapping, aerial photography (U.S.D.A.-U.S. Forest Service, 1939, 1972, 1983; Cartwright Aerial Surveys, 1962; Andregg Inc., 1964-65; U.S.D.A. Soil Conservation Service, 1967), and U.S. Geological Survey 7.5 minute quadrangle of Tahoe City (1969 photo revised). The area was also reconnaissance surveyed on the ground. Areas exhibiting soil physical properties, drainage conditions or vegetation patterns determined to be different than presently mapped were more intensively examined, using soil auger borings or by road cut inspections. The soil in the quarry on th
western border of the study area was described in a backhoe pit. Vegetation species and growth patterns were used as indicators of soil drainage conditions in some cases.

- **Area 1 - Lake Forest**
  
  **Environmental Setting:**
  
  This area is shown on TRPA map sheet D6 (Dollar Point) to be mainly within a delineation of JhC (Jebu story sandy loam, moderately fine subsoil variant, 2 to 9 percent slopes) with a smaller portion represented as Gr (Gravely alluvial land). The geology map (Mathews, 1968) shows this area to be within a unit of Q1 (Recent lake beds). The geomorphic analysis (Bailey 1974) shows this area to be within two delineations, E2 (Outwash, till, and lake deposits) and E3 (Alluvial sands).

  Typical vegetation is Jeffrey pine (Pinus jeffreyi), wyedia (sp.), bitterbrush (Purshia tridentata) and perennial grasses. A drainage way along Main Street displayed willow (Salix), alder (Alnus rhombifolia) and perennial grasses.

  Topography in the study area is fairly level with an incised drainage (piped at depth) running north to south through the west-central portion. This area receives local storm drainage from the north, east and west.

  The Lake Forest area is heavily developed with small lots consisting of both residential dwelling units and commercial establishments.

  **Findings:**

  All of the area with the exception of a narrow strip of land adjacent to Main Street was found to be fairly uniform with respect to soil type. It exhibited a grayish brown medium acid gravelly sandy loam surface over a light yellowish brown massive brittle and hard gravelly clay loam subsoil. This unit occurs on the western side of the area and was verified on the northeast side as well. A typical profile description was taken near the intersection of Aspen Street and Hillcrest Avenue in the abandoned roadway easement.

  The area along Main Street exhibited a very dark grayish brown mixed very gravelly fill over mottled black and dark grayish brown loam underlain by mottled dark brown, reddish yellow and strong brown silty clay loam. The mottled colors are indicative of wetness. The representative soil profile description was taken at the intersection of Hillcrest Avenue and Main Street.

  **Conclusions:**

  The majority of the Lake Forest area is placed in soil unit JhC (Jebu story sandy loam, fine subsoil variant, 2 to 9 percent slopes). The area adjacent to...
Main Street is placed in the unit Lo (Loamy alluvial land).

JhC receives Land Capability class 5 with 25 percent allowable coverage. Lo is placed in Land Capability class 1b with an allowable 1 percent impervious coverage. Please refer to the attached map for delineation of the Land Capability districts.

Area 2 - Tahoe City; Cathedral Drive north to the Truckee River

Environmental Setting:

This area comprises the land from approximately 450 feet north of Cathedral Drive, 500 feet west of Highway 89 to Tonopah Drive. It spreads westward from Tonopah Drive to the Truckee River and includes both private and U.S. Forest Service ownership. Land north of Tahoe Tavern, including Tavern Shores, is also included in Area 2.

This area is shown on IRPA map sheet C-7 as having three soil delineations: TdD (Tahoe stony coarse sandy loam, 5 to 15 percent slopes); JhC (Jebu stony sandy loam, fine subsoil variant, 2 to 9 percent slopes); Gr (Gravely alluvial land).

The geology map, by Mathews (1968), shows this area to be in delineations of Qlo (Older lake beds) and Qm (Glacial moraines). The geomorphic analysis by Bailey (1974) of this area shows delineations E1 (Moraine land undifferentiated) and E2 (Outwash till and lake deposits).

The area has three fairly distinct landforms: a high bluff composed of glacial till materials; an intermediate terrace; and lower position flat lands. The two lower position landforms consist of lacustrine sediments with seeps and springs surfacing along transitions zone from high to low topography.

Typical vegetation is white fir (Abies concolor), Jeffrey pine, Incense cedar (Libocedrus decurrens) and manzanita in the well drained areas. Seeps display willow, elder, sedge and juncoa.

Findings:

Soils were found to be different on each land form. The upper unit was determined to be the Tallac series as presently mapped and no further investigation of that unit was carried out.

The intermediate land form west of Highway 89 was found to display a well or moderately well drained slightly acid brown sandy loam surface over a yellowish brown gravelly sandy loam subsoil, underlain by brittle dark grayish brown sandy loam lacustrine parent materials. This soil was examined in a construction pit at the intersection of Tonopah Drive and Highway 89. The representative pedon was described DAVIS² Consulting Earth Scientists P.O. Box 724 Georgetown, CA 95634 (916) 333-1405
from an auger boring, near the southwest corner of Comstock Village. This unit extends north of Tonopah Drive to the slope break where seeps and springs surface to ponding. Soils surrounding the ponds in this area are somewhat poorly and poorly drained with color mottling and riparian vegetation as indicators of wetness.

The well or moderately well drained soils are similar to the Jabu series as mapped in the Lake Tahoe Basin. The somewhat poorly drained soils resemble the Jabu, seeped, soil.

Lower position soils are derived from alluvium of mixed sources. Most of the area displays a well drained grayish brown slightly acid gravelly sandy loam surface over pale brown slightly acid very gravelly sandy loam. This soil has the same taxonomic classification as the Taliec series. It has similar hydrologic properties. This low position soil has not been previously recognized in the Tahoe Basin and differs from other established units because it has formed from river flood plain materials rather than from glacial sources. It lacks a fragipan at depth.

A wet soil area along the intermediate to low position transition zone adjacent to the Jabu seeped unit was found to have the same properties as Or (Gravelly alluvium), originally mapped nearby. It was poorly or very poorly drained. Inspection of aerial photography between 1964 and 1965 showed that till material had been placed along the terrace transition zone.

A strip of land influenced by wetness along the Lake front also has properties similar to Or or Bo (Beaches) where wave action from the Lake has routinely reworked alluvial materials.

Conclusions:

Soils displaying characteristics similar to Jabu are placed in the soil unit Jad (Jabu coarse sandy loam, 0 to 9 percent slopes) and in Land Capability class 5. This unit is assigned an allowable coverage of 25 percent. The Jabu, seeped unit is placed in Jad (Jabu coarse sandy loam, seeped, 2 to 15 percent slopes) and receives Land Capability class 3 with 5 percent allowable coverage.

The soil unit with properties similar to Taliec soils, for the purpose of this report, will be called "Soil A" and would be placed in Land Capability class 5. This soil is assigned 25 percent allowable coverage. Or (Gravelly alluvium) and Bo (Beaches) are assigned Land Capability class 1b with 1 percent allowable coverage.

Area 3 - Tahoe City; The quarry and west
Environmental Setting:

This area is located west of Fairway Drive and north of the Truckee
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River. Some of the area has been previously used as a gravel quarry. Several hundred
vertical feet of sand and gravel material have been excavated from the mountainside. A
leveler surface is currently being utilized as parking for the rafting industry and as a
construction corporation yard for heavy equipment maintenance and storage. It is shown on
TRPA map sheet C7 as being within soil unit Px (Pits and dumps). Five
commercial lots, extending from the quarry to the western study boundary, are steeply
sloping down to Highway 89. Leveler parking areas surrounding buildings have been
excavated into the hillsides, and paved.

Between Highway 89 and the fence surrounding the maintenance yard at the quarry
site, Jeffrey pine and willow has been established by landscaping efforts. Leveler
areas of the quarry were void of vegetation. Cutslopes ranged from 40 to 68
percent and were sparsely vegetated with rabbitbrush (Chrysothamnus viscidiflorus)
and mountain whitethorn (Ceanothus cordulatus). Slopes under 50 percent were
moderately vegetated.

The area south of Highway 89 is mostly associated with the Truckee River flood
plain and alluvial terraces. Portions of the properties along the River are shown to be
influenced by the Standard Project Flood. (Dept. of the Army, Sacramento District, Corps
of Engineers, 1971). The geology map (Matthews, 1968) shows this area
to be within two units, T9 (andesite) and Qle (Older lake beds). The geomorphic analysis
(Balch, 1974) shows this site to be in units D1 (Toe slope lands) and E2
(Outwash, till and lake deposits).

Riparian vegetation, largely willows and alders, grows along the
Truckee River flood plain.

Findings:

A backhoe pit was examined in the level portion of the quarry area, near the western
fence separating the corporation yard from the parking lot. This pit displayed a very
thickly compacted, pesty, olive brown very gravelly sand and sandy loam surface over
mixed very thickly compacted massive very dark grayish brown very gravelly sandy loam
and sandy clay loam, underlain by stratified beds of light olive brown silt. The excavation
was moist from 14 to 54 inches. The steep cut slopes surrounding the quarry had a thin
mantle of loose mixed andesitic and gravelly colluvial material over exposed older lake
terrace.

The area west of the quarry consisted of soils derived from andesite resembling the
Jorge soil series.
Conclusions:

Most of the quarry area is disturbed and absent of soil processes. It is presently accurately mapped as Px (Pits and dumps). This unit is assigned Land Capability class 1c with 1 percent allowable coverage.

A small portion of the quarry site and the area west of the quarry, excluding paved parking areas and structures, is representative of the soil unit JWF (Jorge-Tahoma very stony sandy loam, 30 to 50 percent slopes). This unit is assigned Land Capability class 2 with allowable coverage of 1 percent.

Land between Highway 89 and the Truckee River remains as mapped: JHC (Jebu stony sandy loam, 2 to 9 percent slopes); Gr (Gravelly alluvial land), with the lower lands within the Projected Standard Flood zone. JHC receives Land Capability class 5 with 25 percent allowable coverage; Gr and the Projected Standard Flood are Land Capability 1b with 1 percent allowable coverage.

- Area 4 - Tahoe City: All the area encircled by Fairway Drive and Grove Street, in addition to land between Highway 28 and the Lake.

Environmental Setting:

This area has eskeric materials adjacent to and upslope of old lake deposits. In some places the eskerite has overrun the lake terraces. The old lake beds along the public beach area dip, creating a concave shaped landform northwest of the commercial lots. There, fine textured alluvium has accumulated under a marsh-like condition. Most of the golf course has been developed on the marsh land. Several perennial streams intertine the golf course. They have been piped underneath the commercial lots and Highway 89 to outlet in the Truckee River. The Highway 28 - 89 "Y" area was historically the confluence of several small perennial streams before they were captured by piping.

TRPA map sheet C7 shows most of this area to be within a delineation of Gr (Gravelly alluvial land) and only a minor portion to be within JHC (Jebu stony sandy loam, moderately fine subsoil variant, 2 to 9 percent slopes). The geology map shows (Mathews, 1968) the area within delineations of Qlo (Older lake beds) and Tya (andesite). Geomorphic analysis (Bailey, 1974) shows the area to be within delineations E2 (Outwash, till and lake deposits) and E3 (Alluvial lands).

Topographic high areas display vegetation consisting of Jeffrey pine, White fir, Incense cedar, wyethia and perennial grasses. Concave landforms and stream zones display willow, alder, aspen, sedge, Juncus and perennial grasses.
Findings:

The area adjacent to Fairway Drive and Highway 89 was formed from andesitic materials over lacustrine sediments. This soil was described on Fairway Drive, approximately 600 feet north of Highway 89. The soil displayed a brown medium acid gravelly loam surface over a variegated light yellowish brown and brown medium acid very gravelly clay loam, underlain by firm white lacustrine sediments. This soil was determined to be similar to the Fugawee soil series. Elsewhere along Fairway Drive and moderately sloping terrains, the soils were found to be similar to the Jabu series as presently mapped. Stream environment zones have incised the Jabu unit in several places.

Soils on concave landscapes within the golf course area exhibit very dark gray mildly alkaline clay or silty clay surfaces, under fill materials some places. Subsoils were light gray mildly alkaline clay, to greater than 4 feet depth. These soils were described from auger borings, one in the parking lot near the school ball field behind the Family Tree restaurant, and from other borings inside a roped off parking lot east of the Shell service station at Highway 89. Soils such as these have not been described in the Lake Tahoe Basin.

Soils on the tilted lake beds were found to be moderately well drained with a slightly acid dark brown sandy loam surface over a variegated strong brown and dark brown slightly acid gravelly clay loam subsoil, underlain by cemented lacustrine sediments. These soils are similar to the Jabu moderately fine subsoil variant. The Jabu soil was described on a gently sloping northwest facing surface, northeast of the Gallery. This terrace, adjacent to the Lake shore, terminates as an escarpment with slopes exceeding 30 percent, running from northeast to southwest, from the Firhouse to Grove Street. This terrace is dissected by a small stream zone (now piped) leaving an island of the higher ground between the "Y" and Mackinaw Road.

Soils along the Lake frontage, at the public beach and below Mackinaw Road are wet and/or subject to wave action and fluctuating lake water levels. Lake frontage soil units are complexes of Be (Beaches) and Br (Gravelly alluvium).

Road ditches, in places, along Fairway Drive and Grove Street conduct active water and support riparian vegetation.

Conclusions:

The small area of Fugawee soils is placed in soil unit FuD (Fugawee very stony sandy loam, 2 to 15 percent slopes). This unit is Land Capability class 5 with 25 percent allowable coverage. For unnamed soils in the golf course and topographic low position areas surrounding the Highway 28-89 "Y", a "Soil B" designation is proposed with Land Capability class 1b and allowable coverage of 1 percent.

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The tilted terrace along Highway 28, or core commercial area, is placed in JhC (Jabu story sandy loam, moderately fine subsoil variant, 2 to 9 percent slopes). This unit receives Land Capability class 5 with 25 percent allowable coverage.

Areas along the Lake shore are Gr (Gravelly alluvial land) and Be (Beaches) with Land Capability class 1b and allowable 1 percent coverage.

- Area 5 - Tahoe City: From Grove street to the eastern boundary

Environmental setting:

This area is heavily developed with commercial shops and paved parking areas. It comprises soils formed from lacustrine sediments and from endesitic materials (possibly colluvial). TRPA map sheet C-7 shows the soils to be mainly FuO (Fugawee very stony sandy loam, 2 to 15 percent slopes), JhC (Jabu story sandy loam, moderately fine subsoil variant, 2 to 9 percent slopes) and Gr (Gravelly alluvium). The geology map (Mathews, 1968) shows this area to be in older lake beds. Geomorphic analysis (Bailey, 1974) shows this area to be in geomorphic unit E2 (Outwash, till and lake deposits).

An order 2 stream used to flow from where the service station presently sits at the corner of Jack Pine Street and Highway 28, down through the public library parking lot, and over to a path between the Boat Works and Safeway shopping areas. It has been rerouted and straightened to flow directly from above the service station, due south, to down between the Fantasy Inn and the Safeway parking lot where it rejoins the pre-existing drainage near the Boat Works. The paved shopping mall parking lot in front of the library, the Boat Works and the Round House diverts Highway 28 storm runoff water all the way to the Lake.

Findings:

The area mapped FuO was inspected in several place along Pioneer Way and Tahoe Street and found to exhibit physical properties (soil texture, depth and drainage) similar to the Fugawee series. It was considered to be accurately defined on TRPA map sheet C-7 and was not changed.

The State Park and the area, northeast of Tahoe Street was found to be poorly drained, growing willow, elder and juncus vegetative types, and consistent with the Gr unit as mapped.

A narrow strip along Highway 28, between the State Park and the east boundary, and a land remnant in the Safeway parking lot were found to have physical properties similar to those described on the dipping terrace near the Gallery, and left in JhC, as mapped.

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Four lots on the far east end of the project were noted as derived from volcanic sources on slopes between 15 and 30 percent. These soils were deep and well drained, similar to the Jorge series.

The area of land in the vicinity of the library, Round House and Boat Works has been extensively altered. Because of improvements consisting of paving and underground utilities, field investigations were primarily surficial; they were supplemented with aerial photography to determine the extent of change.

The lawn area near the Boat Works appears to have emerging springs, and much of the pavement in front of the Round House displays signs of alligator cracking or symptoms of subgrade failure due to saturated conditions. Drainage has only slightly improved in this area which used to be stream environment. At best it reflects a soil with hydrologic properties similar to Jabu sandy loam, seeped variant.

Conclusions:

With the exception of the rerouted drainages down through the Round House - Boat Works area, and soils on the four east end lots in the survey area, Land Capability districts remain unchanged.

The rerouted drainage is an order 2 stream and requires 50 feet setbacks to improvements on either side of the center of the flow line. The area which was originally the old stream zone has slightly improved drainage but still exhibits signs of seasonal wetness and is placed in JbD (Jabu coarse sandy loam, seeped, 2 to 5 percent slopes). This unit is Land Capability class 3 with 5 percent allowable coverage.

Soils on the four lots at the northeast end of the study area are JteV (Jorge - Tehama very stony sandy loam, 15 to 30 percent slopes) rather than Rx (Rock outcrop and rubble land). JteV is Land Capability class 4 with 20 percent allowable coverage.

Please refer to the attached map for proper capability district delineations.

Respectfully submitted,

Sidney Davis,
Certified Professional
Soil Scientist No. 1031
Representative soil Profiles:
Lake Forest:
Profile No. 1

Location: Near intersection of Hillcrest Avenue and Aspen Street
Vegetation: Jeffrey pine, wyethia perennial grasses, bitterbrush
Soil Classification: Fine-loamy, mixed frigid Ullic Haploxeraufs
Soil Series: Jebu moderately fine subsoil variant

0  1 to 0 inches, litter and duff.

A1  0 to 10 inches, grayish brown (10YR 5/2) gravelly sandy loam, dark brown (10YR 3/3) moist; moderate fine granular structure; soft, friable, slightly sticky and slightly plastic; many fine and medium, few coarse roots; many very fine and fine interstitial pores; medium acid; 15 percent gravel; clear smooth boundary.

A12  10 to 14 inches, grayish brown (10YR 5/2) gravelly sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, friable, slightly sticky and slightly plastic; many fine and medium common coarse roots; many very fine and fine interstitial pores; medium acid; 15 percent gravel; clear wavy boundary.

B1  14 to 23 inches, brown (7.5YR 5/4) gravelly loam, dark brown (7.5YR 3/4) moist; weak fine subangular blocky structure; slightly hard, friable, sticky and slightly plastic; many fine and medium few coarse roots; common very fine tubular and interstitial pores; medium acid; 15 percent gravels; gradual smooth boundary.

B2it  23 to 30 inches, light yellowish brown (10YR 6/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots; few very fine and fine tubular pores; few thin clay films on ped faces; medium acid; 15 percent gravel; gradual smooth boundary.

B22t  30 to 36 inches, light yellowish brown and brownish yellow (10YR 6/4, 6/6) gravelly clay loam, dark yellowish brown and yellowish brown (10YR 4/4, 5/6) moist; moderate medium angular blocky structure; hard, firm, sticky and plastic; few very fine and fine roots; few very fine and fine tubular pores; many moderately

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thick clay films on ped faces; medium acid; 25 percent gravel; gradual smooth boundary.

B23tx 35 to 55 inches, brownish yellow (10YR 6/6) gravelly clay loam, dark brown (10YR 3/4), moist; massive; hard, very firm, sticky and plastic; many moderately thick clay films coating mineral grains; medium acid; 35 percent gravel; gradual, smooth boundary.

B3tx 55 to 60 plus inches, light brownish gray (2.5Y 6/2) very gravelly clay loam, dark grayish brown (2.5Y 4/2) moist; massive; hard, very firm, sticky and plastic; many moderately thick clay films coating mineral grains; medium acid; 35 percent gravel.

Lake Forest: Profile No. 2
Location: Intersection of Hillcrest Avenue and Main Street
Vegetation: Willow, elder, perennial grasses
Soil Classification: Loamy, mixed, frigid Aquic Haploxeraus
Soil Series: Unknown

C 0 to 14 inches, dark brown (10YR 4/3, 3/3) very gravelly mixed fill material

A1 14 to 20 inches, black (10YR 2/1) loam, moist, with many medium faint mottles of dark grayish brown (10YR 4/2); strong medium granular structure; hard friable, slightly sticky and slightly plastic; common very fine, fine and few medium roots; common very fine and fine interstitial pores; slightly acid; clear, smooth boundary.

A3 20 to 26 inches, very dark brown (10YR 2/2) with many medium distinct mottles of very dark brown (10YR 3/3) loam, moist; moderate fine subangular blocky structure; slightly hard; very friable; slightly sticky and slightly plastic; common very fine, fine, medium and few coarse roots; pores and reaction as above; gradual smooth boundary.

B21t 26 to 36 inches, dark brown (10YR 3/3) silty clay loam with many coarse prominent mottles of strong brown (7.5YR 5/6); strong medium subangular blocky structure; hard, friable, sticky and plastic; common very fine and fine roots; common very fine and fine tubular pores; many thin clay films on ped faces and

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In pores; slightly acid; gradual wavy boundary.

B22b 36 to 40 inches, mottled dark brown, reddish yellow and strong brown (10YR 3/3, 7.5YR 6/6,4/6) silty clay loam; strong subangular blocky structure; hard, firm, sticky and plastic; common thin clay films on ped faces and in pores; slightly acid; manganese concretions.

Tahoe City Soil Profile No. 1

Location: Near southwest corner of Comstock Village

Vegetation: Fir, Jeffrey pine, incense cedar, manzanita

Soil Classification: Coarse-loamy, mixed frigid, Ultic Haploxeralfs

Soil Series: Jabu

0 1 to 0 inches, twigs, conifer needles and duff.

A11 0 to 4 inches, brown (7.5YR 5/4) sandy loam, dark brown (7.5YR 3/4) moist; weak medium subangular blocky structure parting to weak fine granular; soft, friable, nonsticky and nonplastic; common fine and medium roots; common fine tubular pores; slightly acid; 10 percent gravel; clear smooth boundary.

A12 4 to 14 inches, brown (7.5YR 5/4) sandy loam, dark brown (7.5YR 3/4) moist; weak fine subangular blocky structure; soft, friable, nonsticky and nonplastic; common fine, medium and coarse roots; common fine interstitial pores; slightly acid; 10 percent gravel gradual smooth boundary.

B1 14 to 30 inches, yellowish brown (10YR 5/4) gravelly sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; hard, friable, nonsticky and nonplastic; common fine, medium and coarse roots; few fine tubular pores; few thin clay films in pores; medium acid; 15 percent gravels; gradual smooth boundary.

B21t 30 to 48 inches, light yellowish brown (10YR 6/4) and yellowish brown (10YR 5/6) sandy loam (near loam) dark grayish brown (10YR 4/2) moist; moderate medium angular blocky structure; hard, friable, slightly sticky an slightly plastic; few fine and medium roots; few very fine tubular pores; common thin clay films bridging sand grains; medium acid; gradual smooth boundary.

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822x 48 to 55 inches, yellowish brown (10YR 6/4) sandy loam, dark yellowish brown (10YR 4/4) moist; strong medium angular blocky structure; hard, friable, slightly sticky and very slightly plastic; few very fine tubular pores; common thin clay films in pores; clear smooth boundary.

Hox 55 to 60 inches, light gray (10YR 7/2) sandy loam, very dark greyish brown (2.5Y 3/2) moist; weak fine platy structure; hard, friable, slightly sticky and nonplastic; few very fine tubular pores; slightly acid.

Note: Peds in last two horizons have brittle feeling when crushed by hand.

Tahoe City Profile No. 2

Location: South of Tavern Shores, 75 feet east of State Highway 89, about 1500 feet south of the Truckee River bridge.

Vegetation: Jeffrey pine, Lodgepole pine, service berry, sweet clover

Classification: Coarse-loamy (or loamy skeletal), mixed, frigid Entic Xerumbrept

Soil Series: Not defined in Lake Tahoe Basin (Soil "A")

A11 0 to 8 inches, grayish brown (10YR 5/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; moderate very fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine, few medium roots; common very fine and fine interstitial pores; slightly acid; 25 percent gravel; gradual smooth boundary.

A12 8 to 14 inches, brown (10YR 5/3) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine to medium, few coarse roots; common very fine and fine interstitial pores; slightly acid; 30 percent gravel; clear smooth boundary.

C1 14 to 36 inches, pale brown (10YR 6/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; many very fine to medium, few coarse roots; few very fine and fine interstitial pores; slightly acid 35 percent gravel; gradual smooth boundary.

C2 36 to 40 inches plus, pale brown (10YR 6/3) very gravelly sandy loam, dark brown

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(10YR 3/3) moist; massive, slightly hard, friable, nonsticky and nonplastic; few fine and medium roots; few very fine and fine interstitial pores; slightly acid; 35 percent gravel.

Tehca City Soil Profile No. 3

Location: Fairway Drive - approximately 500 feet north of intersection with Hwy 89
Vegetation: Jeffrey pine, wyethia, bitterbrush, perennial grasses
Soil Classification: Fine- loamy, mixed, frigid, Utlc Haploxeralfs
Soil Series: Fugawa

A1 0 to 7 inches, brown (10YR 5/3) gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate medium granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine to medium roots; common very fine to coarse tubular pores; medium acid; 15 percent gravel, 10 percent cobblestones; clear smooth boundary.

B1 7 to 20 inches, brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, friable, sticky and slightly plastic; many very fine to medium roots; common very fine and fine tubular pores; medium acid; 15 percent gravels; 10 percent cobblestones; clear smooth boundary.

B21t 20 to 34 inches, yellowish brown (10YR 5/4) gravelly sandy clay loam (near loam), brown (10YR 4/3) moist; moderate medium angular blocky structure; hard, friable, sticky and plastic; many very fine and fine roots; moderate fine and medium, few coarse tubular pores; few thick and common thin clay films on ped faces; medium acid; 25 percent gravels; 5 percent cobblestones; gradual wavy boundary.

B22t 34 to 42 inches, variegated light yellowish brown (10YR 6/4) brownish yellow (10YR 6/6) and strong brown (7.5YR 5/8) gravelly clay loam, variegated yellowish brown (10YR 5/6) and strong brown (7.5YR 5/8) moist; massive; very hard, friable, sticky and plastic; few very fine roots; few very fine and fine tubular pores; few moderately thick clay films in pores; slightly acid; 35 percent gravels, 5 percent cobblestones; gradual wavy boundary.
Tahoe City Soil Profile No. 4

Location: Corner of ballfield, end golf course off Grove Street
Vegetation: None - lot used for vehicle traffic and parking
Soil Classification: Fine, montmorillonitic, nonacid, frigid, Fluventic Humaquepts
Soil Series: Not defined in the Lake Tahoe Basin (Soil "B")

Note: There is 18 inches of compacted fill over the original surface.

0 to 18 inches, fill consisting of sandy loam to sandy clay loam material, dark grayish brown in color.

A1 18 to 25 inches, very dark gray (N3/0) clay, black (10YR 2.5/1) moist; very coarse prismatic structure; hard, friable, sticky and plastic; nor roots; mildly alkaline; gradual smooth boundary.

C1 25 to 34 inches, light gray (N 7/0) silt clay, black (N 2/0) and dark gray (N 4/0) moist; very coarse prismatic structure; very hard, firm, sticky and plastic; no roots; mildly alkaline; clear smooth boundary.

C2 34 inches plus, light yelllowish brown (2.5Y 6/4) and light gray (N 7/0) clay, black (10YR 2/0) and grayish brown (2.5Y 5/2) moist; weak very coarse prismatic breaking to moderate medium angular blocky structure; very hard, firm, sticky and plastic; mildly alkaline.

Tahoe City Soil Profile No. 5

Location: 50 feet northwest of the Gallery - 15 feet from escarpment to Tahoe City beach
Vegetation: Jeffrey pine, wyethia, perennial grasses
Soil Classification: Fine-loamy, mixed frigid Ultic Haploxeralfs
Soil Series: Juba moderately fine subsoil variant

A1 0 to 12 inches, dark brown (7.5YR 4/4) sandy loam, dark brown (7.5YR 3/2) moist; moderate medium granular structure; soft, friable, nonsticky and nonplastic; common fine and medium, few coarse roots; common very fine and fine interstitial pores; slightly acid; clear smooth boundary.

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B1 12 to 24 inches, dark brown (7.5YR 4/4) sandy loam (near loam), dark brown (7.5YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; common fine and medium and few coarse roots; common very fine and fine tubular and interstitial pores; slightly acid; gradual smooth boundary.

B21t 24 to 36 inches, dark brown (7.5YR 4/4) gravelly loam, dark brown (7.5YR 3/4) moist; weak medium subangular blocky structure; hard, friable, sticky and slightly plastic; common fine, medium, and few coarse roots; few very fine tubular pores; few thin clay films on ped faces; slightly acid; 20 percent gravel; gradual smooth boundary.

B22t 36 to 48 inches, variegated dark brown (7.5YR 4/4) and strong brown (7.5YR 5/8) gravelly clay loam, moist; moderate medium subangular blocky structure; very hard, friable, sticky and plastic; few fine roots; few very fine tubular pores; common thin clay films on ped faces and in pores; slightly acid; 15 percent gravels; clear smooth boundary.

IIC1 48 to 58 inches, olive brown (2.5Y 4/4) clay loam with yellowish red (5YR 4/6) iron mattises, moist; massive; hard, slightly firm, sticky and plastic; very few very fine tubular pores; slightly acid; abrupt smooth boundary.

IIC2 58 inches, cemented lacustrine sediments.

Tahoe City Soil Profile No. 6

Location: Payless lot near Shell station
Vegetation: Very sparse growth of weeds
Soil Classification: Fine, montmorillonitic, nonacid, frigid, Fluventic Humaquepts
Soil Series: Not defined in the Lake Tahoe Basin ("Soil B")

0 to 15 inches, very compacted gravelly engineered fill imported to site

A1 15 to 32 inches, dark gray (10YR 4/1) silty clay, black (10YR 2.5/1) moist; strong very coarse prismatic structure; extremely hard, very firm, very sticky and very plastic; pressure faces; mildly alkaline; abrupt smooth boundary.

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C1  32 to 46 inches, grayish brown (10YR 5/2) silty clay, very dark grayish brown (10YR 3/2) and black (10YR 2.5/1) moist; strong very coarse prismatic structure; extremely hard, very firm, very sticky and very plastic; pressure faces; mildly alkaline; abrupt smooth boundary.

Ab  46 to 55 inches, dark gray (10YR 4/1) and brown (10YR 5/3) silty clay, black (10YR 2/0) and very dark grayish brown (2.5Y 3/2) moist; structure, consistency as above; pressure faces; mildly alkaline; gradual smooth boundary.

Cg  55 to 60 inches, light gray (5Y 7/2) and pale olive (5Y 6/4) silty clay, olive gray (5Y 4/2) and olive (5Y 5/6) moist; weak medium prismatic structure; extremely hard, firm, very sticky and very plastic; mildly alkaline.

Takoma City Soil Profile No. 7

Location: Quarry, near the west fence
Vegetation: None
Classification: Engineered fill materials (nonsoil)
Soil Series: None

C1  0 to 7 inches, pale yellow (2.5Y 7/4) very gravelly sand to sandy loam, olive brown (2.5Y 4/4) moist; strong coarse platy structure; very hard, very firm, nonsticky and nonplastic; abrupt, smooth boundary.

C2  7 to 46 inches, very dark grayish brown (2.5Y 3/2) very gravelly sandy loam to sandy clay loam, moist; massive; very hard, very firm; slightly sticky and slightly plastic; 15 percent cobblestones and 25 percent gravel; abrupt, smooth boundary.

IIIC  46 to 54 inches, light olive brown ((2.5Y 5/4) silt, moist; massive; slightly hard, friable, slightly sticky and slightly plastic; bedded lacustrine sediments.
References:

1. Andregg Inc. 1964, 65. Aerial photography, black & white, Tahoe City area.


3. Cartwright Aerial Surveys Inc. 1962. Aerial photography, black & white, 1: 20,000 scale, Tahoe City and Lake Forest area.


10. ———. 1971. Map sheet C-7 (Tahoe City), scale 1" = 400'.


13. ———. 1967. Aerial photo soil map sheets, black & white contact prints.

14. United States Department of Agriculture, Forest Service. 1983. Aerial photography, color contact prints, Tahoe City and Lake Forest area, scale 1" = 100'.

15. ———. 1939. Aerial photography, black & white contact prints, Tahoe City and Lake Forest area, scale 1: 20,000.

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April 17, 1991

Mr. Gary Shellhorn  
IPES Program Manager  
Tahoe Regional Planning Agency  
P.O. Box 1038  
Zephyr Cove, NV  89448

RE: Tahoe City Land Capability Mapping.

Dear Gary:

Following our conversation yesterday, I will recount for you our methodology for arriving at the Land Capability districts in the Tahoe City Plan Area. I will also comment on "Soil B" that was delineated in the golf course area.

Before we went to the field, a variety of aerial photographs, in stereo pairs, were utilized for the purpose of three dimensional landform identification and separation of geomorphic surfaces. Photographic material utilized included U.S.F.S. 1939 (located in Nevada City, CA) to gain a sense of what the area looked like fifty years ago. In addition, we also had a set of aerials from Cartwright & Aerial Surveys (Sacramento, CA) flown in 1962. We also researched files of Andregg, Inc., (Auburn, CA), a land survey company that did extensive subdivision work back in the late 1950's and early 1960's. They provided low elevation photography of Tahoe City for the years 1964 - 65. Dr. Skau (hydrologist, subcontractor on the job) provided U-2 color infrared photography, useful for delineating wet areas. TRPA provided us with a large color aerial blowup of Tahoe City, 1986.

After the major landforms were delineated, we set out to describe the soils found on them. We excavated no less than fifty small diameter holes, in addition to examining escarpments, bankcuts, roadcuts, construction site excavations, vegetation lines and other subtle variations in topography that might alter drainage patterns or soil types. After we had a sense of what constituted major soil units, based upon soil color, texture, structure, depth, drainage class and vegetation, we excavated or selected sites along road cuts that were considered representative for that particular unit. In all, we had seven sites we felt were representative of Land Capability districts in the Tahoe City Area. If one were to revisit those sites, and examine them, they would be able to see what we considered to be the "Typical" soil for a given map unit. Each map unit was traversed and closed, on the ground. There were many more than seven sites examined to delineate the Land Capability districts in the Tahoe City area.

With regard to Soil B, this unit was found to be a fairly extensive soil body (approximately 60 acres) that exists in the golf course area. It extends from Grove Street down to Highway 28/89. A similar soil exists in a meadow of about 20 acres size, on the West shore of the Lake, between Meadow and Ellis Roads, south of Homewood. Like Soil B in Tahoe City, this soil body did not receive recognition as a separate soil series in the published survey, but was lumped into the miscellaneous land type Gr (gravelly alluvial land). Where complex areas of lake or channel deposits had become reworked by natural forces, miscellaneous land types were developed to describe them, because of high variability. There can be many unnamed soils in a miscellaneous land type. Gr has no formal description, and no soil series designation. Gr is typically associated with coarse textured materials in seasonally saturated areas, with minor inclusions of marshes, in and adjacent to, active stream channels.

When soils of small acreage extent were found in a soil survey area of Order 2 level, such
as the Lake Tahoe Basin Survey, they were considered too insignificant to stand as a single
mapping unit in a published report. At that time, 2,000 acres was the usual acreage requirement,
along with 10 modal descriptions, to set up a soil series. Because soils of small acreage amounts
received no mention in the final soil survey report does not mean they do not exist. Small areas of
unnamed soils were usually lumped into a similar unit, or a miscellaneous land type such as Gr, Lo
or Mh. Usually budget constraints were the reason for lumping small areas of unnamed soils into
larger units. Had the Soil Conservation Service been discharged to map at Order 1 level, then Soil
B might have been separated and had a soil series name set up for it.

Soil B formed in a basin-type landform (concave area) behind an uplifted and tilted,
Pleistocene terrace. The terrace, because it was tilted upward at the Lake front, caused drainage
water to impound behind it, in the area of the golf course. Soil B developed in very slow moving
drainage water under anaerobic conditions, causing organic matter and fine grained materials to
accumulate, turning the surface black, with dull gray color at depth. The drainage outlet from the
vicinity of Soil B is into the Truckee River, via a pipe system beneath the “Y” intersection of
Highways 28 and 89. Aerial photographs (Andregg, 1965) show two converging streams inside
the roadway island at the "Y", now covered by a sculpture and paved walkways.

It was recognized that a portion of Soil B had been filled, southwest of the Lucky Market.
To classify this soil, Soil Taxonomy was utilized. According to the rules of taxonomy, a soil must
have more than 50 cm (20 inches) of fill over it, before it can be recognized as a different soil. If
the fill is less than 50 cm, the soil beneath dominates the characteristics of the profile with regard
to land use performance. Only 15 inches of fill was found in two auger borings near the center of
the vacant lot. Soil B, found beneath the fill, dominated the profile and was mapped in this area.

Soil B was then evaluated by the Bailey Land Capability system (page 20). It was found to
be very poorly drained, a member of Hydrologic Group D and placed in Class 1b.

To qualify for "Man modified", a soil must be significantly altered as to change the
previous land capability designation, according to Chapter 20, TRPA code of ordinances. In the
case of the lot next to the Lucky Market, the Gr capability district as originally mapped placed the
lot in Class 1b. Now, as mapped, Soil B is Class 1b. This site, in our analysis, could not
technically qualify for man modified designation.

As defined by Section 404 of the Clean Water Act and the Federal four agency criteria,
Soil B is technically a "Hydric Soil" because it has an aqic moisture regime, with evidence of
seasonal wetness above 20 inches (low chroma mottling or gleying). Where it has been filled and
no hydrophytic plants thrive, it may not qualify as a Jurisdictional Wetland.

As it exists today, Soil B receives Class 1b, under the Bailey Land Capability system and
TRPA code of ordinances.

Respectfully submitted,

Sidney Davis,
Certified Professional
Soil Scientist / Soil Classifier
No. 1031
TAHOE CITY URBAN RUNOFF TREATMENT FACILITY HYDROGEOLOGIC SITE INVESTIGATION

AUGUST 1990
HYDROGEOLOGIC SITE INVESTIGATION

TAHOE CITY
URBAN RUNOFF TREATMENT FACILITY
LAKE TAHOE, PLACER COUNTY, CALIFORNIA

Prepared For:

K. B. Foster Civil Engineering, Inc.
Carnelian Bay, CA

Prepared By:

Jon Paul Fenske (MS)
Univ. of Nevada-Reno

August, 1990
Figure 11. Map of Groundwater Levels - May 3, 1990.
Figure 10. Map of Peak Groundwater Levels - March 23, 1990.

NOTE: DEPTH VALUES FOR WELLS 3 AND 4 WERE ESTIMATED FROM OTHER CONTOUR DIAGRAMS.

○ = Well
Figure 9. Map of Groundwater Levels - January 24, 1990.
Figure 12. Side View of Groundwater Levels.
MAN MODIFIED ASSESSMENT OF PAYLESS SITE

The following analysis has been undertaken to provide evidence regarding a proposed man modified amendment of the TRPA Land Capability Overlays. Findings are discussed below, in the order referenced in Subsection 20.2.F (2) of the TRPA Code of Ordinances. This report was prepared with the assistance of Mr. Grant Kennedy and Mr. John Rogers (soil scientists), and Ms. Lynda Nelson (botanist). Dr. Paul Tueller provided the color infrared photography.

Payless Site: Geomorphic Characteristics

Mathews (1968) indicates that the geology of the site is Quaternary Lake Deposits, bordered along Fairview Drive by "Tahoe City" olivine latite. Livingston describes the geology as Lake Terrace Deposits, bedded silts. Bailey (1974) classifies the geomorphology as (E), alluvial lands. He further identifies two Land Capability Districts on the Payless parcel: 1b and 5. Land Capability District 1b coincides with soil type Gr (Gravelly Alluvial Lands) and is characterized by poor natural drainage as a surrogate for combined slope, relative erosion potential and runoff potential. Of the seven land capability districts identified by Bailey, District 1b is described as having "least tolerance" for use and a "high disturbance" hazard.

The second District identified on the parcel by Bailey is 5, which coincides with soil type JhC (Jabu stony, sandy loam). It is characterized by 0-16% slopes, slight relative erosion potential, and moderately high to high runoff potential. District 5 has high tolerance for land use and a low disturbance hazard.
As mapped by Bailey, the Land Capability 1b area is bordered by Highway 28 to the south, the Lucky's store to the northeast, the Shell station to the southwest, the forested District 5 to the west, and 1b to the north. The District 5 area is bordered by District 1b to the east, and is a relatively narrow zone paralleling a drainage ditch on the periphery of the 1b.

This report focuses almost entirely on the mapped 1b area.

**Surface Hydrology**

1. **Channels.** There is no historic record (USGS maps, aerial photos, historic photos, etc.) of a stream channel(s) traversing the Payless site. There are now a series of drainage ditches that nearly surround the 1b area. The ditches adjacent to the Lucky's store and the Shell station are not on the Payless property, but serve to channel surface runoff from those properties to the drainage ditch adjacent to Highway 28. The Lucky's ditch is fed by overflow from the lower golf course pond, via a French drain that intercepts subsurface flow at the back of Lucky's and by an open ditch. These also serve to feed water to the Payless property through exfiltration to the groundwater system during snowmelt or rain storms. Additionally, the upper ditch at the woodland boundary is 2 to 3-1/2 feet deep and intercepts subsurface flow moving to the 1b site. It is fed by a 48 inch diameter culvert extending several hundred feet to an open ditch that drains a large seep zone. It is also directly fed by water from an old, buried, iron pipe at the eastern edge of the ditch. The source of this water is an abandoned well in the aspen grove directly above the ditch. Water from this ditch is conveyed off the Payless property to a culvert (on the western edge of the Shell station) that runs beneath Highway 28 and empties directly into the Truckee River. As shown by the 1979 color infrared photo and by Nelson's 1991 report (attached to this analysis), there is a pronounced zone of wetland vegetation associated with this ditch.
PAYLESS SITE & VICINITY - 1990
Arrows indicate drainage in the vicinity of the Payless Site.
The drainage ditch along Highway 28 is about 2-1/2 feet deep and straddles the Payless property line. It captures water from the Lucky's store ditch, from road runoff, and by intercepting subsurface flow from the 1b site.

Figure 12 of the K.B. Foster report (1990) is reproduced here to show the probable drawdown of the water table on the 1b site that is associated with this ditch. The collected water is then fed into culverts (at the eastern edge of the Shell station) that pass under Highway 28 and discharge directly to the Truckee River.

The effect of these ditches is to produce a substantially man-modified hydrologic condition: (1) by bringing in off-site water; (2) by lowering watertable levels during seasonal wet periods; (3) by creating corridors of wetland vegetation; and (4) by creating "saturation wedges" during dry periods (See explanatory diagram; Kirkby, 1989). Channelization also contributes to storm runoff, higher peak flows and channel erosion (Bailey, 1974).

2. Overland Flow. Overland flow, sometimes called "sheet" flow, occurs when the infiltration capacity of the soils is less than the rate at which water is delivered to the soil surface. In the Tahoe Basin, it commonly occurs over frozen, hydrophobic (water repellant), or saturated soils. It also occurs where bare surface soils are high in silt and clay or where soils are artificially compacted.

Although most of the Payless site exhibits low erosion potential due to its very slight slope (1 to 2 percent), it exhibits high runoff potential due to the highly compacted nature of the fill material. Evidence of overland flow was seen on the Payless 1b site in March, 1991. Typically, it left a trail of stratified or sorted sediments originating from the ditch (Class 1b) along Lucky's. Ditch flow was diverted onto the Payless 1b
Techniques for measuring subsurface flow on hillslopes

(a) Before digging of pit

(b) After digging of pit

Figure 3.3 Effects of a pit in distorting unsaturated downslope flow

Source: Kirby, p. 79
site by snow piles (up to 6 feet high) from Lucky's parking lot. (See Photo 1)

3. Ponding. This term, also called "retention storage," refers to stationary water trapped in various size depressions. It typically occurs during snowmelt or substantial rain or rain-on-snow events. Ponding on compacted fill material was observed, March 6, 1991, during snowmelt and covered about twenty-five percent of the compacted fill area. It was also observed on April 4 and May 2, during site visits. (See Photo 2)

Subsurface Hydrology

1. Characteristics of 1b Land Capability. The dominant characteristic of Bailey's 1b designation relates to drainage. 1b is described as "poorly drained:"

"Subclass 1b is a narrow one including stream channels, marshes, flood plains, and meadows (fig. 10). These lands are naturally wet and poorly drained and are critical areas for management and protection of water resources." (Emphasis added)

Relative to the concept envisioned by Bailey, the Payless site has been greatly altered. The most obvious modification is the channelization of the property's landscape into straight ditches resulting in intercepted subsurface flow.

Offsite, and directly above the site, water is diverted by ditches, interceptor pipelines, and dirt and paved roads. (Photos 3 - 6). Some of these modifications occur on the adjacent golf course, resulting in impacts to Payless due to irrigation and fertilization (Photos 7 - 8). Drain pipes, irrigation, reconfiguration of the land forms, and completely altered vegetation influence both surface and subsurface hydrology downslope on the Payless property.
The site's upper ditch is fed by water flowing from a 2 inch diameter upper pipe, which was delivering an estimated 1/4 cfs (also noted by Munn) during my site visits in April and May, 1991. It is also fed by a 48 inch culvert originating from a ditch (draining a seep zone) several hundred yards away. Flow was also augmented from the seep zone beginning about mid-distance to the Shell station; the upper bank has "calved" (caved in) two slabs of bank material about 6-10 feet long. Thus, there is a persistent off-site source of water that feeds the upper ditch.

Drainage obstructed by the Lucky's building has been diverted to a ditch located between Lucky's and the Payless site, where it is further channeled to a ditch at the edge of Highway 28 and then through a culvert that empties into the Truckee River. Additional water is imported from the Lucky's site during the winter through that facility's snow storage practices. Snow removed from the Lucky's parking lot is piled on the adjacent drainage ditch area, resulting in the diversion of water to the Payless property.

A third substantial modification occurs as a result of the compacted fill material. From the Kennedy soils report (Kennedy, 1991), visual field inspection, the 1972 color aerial photo, and the 1979 color infrared photo, the fill appears to cover well over 50% of the lower slopes to a thickness of 0.5 to 2.5 feet. This effectively lowers the level of subsurface water, and hence the availability to plant roots with consequent reduction in plant biomass and nutrient uptake. Second, compaction has reduced infiltration capacity so that soil water recharge from above is reduced, with results similar to lower subsurface water.

Highway 89 has also had a substantial effect on the normal functioning of subsurface flow. (Photos 9 - 10). Excavation of original soils and replacement with compacted fill has served to partially block the normal downslope flow regimes. To some degree this water is redirected to the ditch and culvert network along the
highway right-of-way, which then drains into the Truckee River.

Finally, historic land uses above the property's wooded area have also left a trail of abandoned roads, drain pipes, and altered vegetation.

Considering the alterations described above, it is reasonable to conclude that the subsurface hydrology of the Payless site has been substantially man modified.

The existence of water in drainage ditches does not necessarily indicate that the Payless site functions as a meadow (land capability district 1b), nor does the occurrence of ponding on the property's compacted areas. These factors do, however, provide additional evidence of the property's man modified drainage and compaction.

Further evidence concerning the property's subsurface drainage characteristics has been provided by Kennedy and Foster, who each conducted analyses within the past year. These studies are reviewed below, followed by a brief summary and conclusions.

A. The Kennedy Soils Report. The 1991 soils report by Kennedy indicates that drainage for 4 of the 6 pits was "somewhat poor" and was "poor" for the other two. In general, "poor drainage" corresponds to an area of wetland plant species below the upper ditch and to an area of wetland species in the northeastern quadrant near and above the back of the Lucky store. "Somewhat poorly drained" soils occupy most of the site between Highway 28 and the poorly drained soils and are associated in part with a layer of fill mater. Kennedy indicates that because of man-modification, most of the Bailey-classified 1b site should now be classified as Land Capability District 5.

B. K.B. Foster Report. K.B. Foster Engineering published results of a hydrogeologic investigation of the Payless
site in August, 1990. Its purpose was to evaluate the Payless site as a treatment facility for Tahoe City urban runoff. A grid of 10 observation wells was put in place by December, 1989. They ranged from 5 to 8 feet deep, and observations were taken through June 4, 1990.

How well do water levels in these observation wells represent the "groundwater levels" on the Payless parcel and especially on the 1b site? In our judgment they bias the actual subsurface water levels in the direction of being nearer the surface, as explained below.

The K.B. Foster report refers to water levels at observation wells 5 and 7 as artesian because they are above the ground surface. This means that the wells have penetrated a confining layer and that the actual water level is below the ground surface at some unspecified depth.

Kennedy's soil report makes note of the depth at which water is seeping into soil pits 3 and 6, those in close proximity to observation wells. The depth of seepage at soil pit No. 3 was 40 inches; that at No. 6 was 72 inches. Depth of seepage at the other pits were shown as follows:
OCTOBER 25, 1990, WATER LEVELS
KENNEDY SOIL PITS

<table>
<thead>
<tr>
<th>Soil Pit</th>
<th>Water Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>67</td>
</tr>
<tr>
<td>2</td>
<td>(no seepage at depth of 68 inches)</td>
</tr>
<tr>
<td>3</td>
<td>40</td>
</tr>
<tr>
<td>4</td>
<td>42</td>
</tr>
<tr>
<td>5</td>
<td>63 inches</td>
</tr>
<tr>
<td>6</td>
<td>72 inches</td>
</tr>
</tbody>
</table>

The substantial differences noted between Foster's and Kennedy's observations suggest that the property's subsurface drainage is affected by seasonal variations in water level. The more permanent water table level is best shown by the soil pit observations. Also, Kennedy's soil profiles show that layers of silty clay or compacted fill may act as confining layers, resulting in the creation of artesian conditions not indicative of actual water table depth.

Another problem with the Foster report is that the placement of the observation wells unintentionally favors wetter sites, thus indicating overall shallower subsurface water levels as explained below:

1. Based on the vegetation overlay presented in Nelson's 1991 report, it is evident that most wells are located within the wetland species area near
drainage ditches, and would therefore give the impression of a shallower subsurface water level for the areas represented.

2. Observation well #1 is adjacent to a seep zone.

3. Observation wells 2 and 3 are located several feet from the obligate wetland species area along the drainage ditch next to Lucky's. Off-site ditch water is brought in behind Lucky's. The back northwest corner of Lucky's also appears to divert subsurface water downslope and towards observation wells 2 and 3.

4. Snow from the Lucky's parking lot is also stored virtually on top of observation wells No. 3 and 4. Note that between February 28 and March 30, 1990, Foster indicates the wells were covered by snow and no observations were recorded. These snow piles are commonly 3 to 6 feet high and add substantial snowmelt water to the subsurface water system. These three sources, all from off-site, would distort the "groundwater" picture in the direction of being closer to the surface. Note that observation well No. 4 is also snow covered for about one month during this same time period.

5. Wells 5, 6 & 7 are in the immediate area of the artesian system.

6. Observation wells 9 and 10 are located inside the wetland vegetative species zone. Additionally, well No. 10 is close to the back center of the Shell station where water could be stacked up (saturation wedge) against the foundation.
C. Summary - Subsurface Drainage

In summary, based on evidence provided by the property's physical characteristics, supported by Kennedy's and Nelson's findings, it is evident that the subsurface drainage of the property has been substantially altered through the removal of vegetation, introduction of fill, development of the Golf Course, construction of Lucky's and Highway 28, and drainage channelization. It would be next to impossible to quantify the hydrologic consequences of these on- and off-site modifications. It is reasonable, however, to conclude that they have significantly modified the hydrology of the Payless site.

Soils

As stated at the beginning of this report, Bailey mapped the site as primarily District 1b, with District 5 on the upper portions of the site. In the proposed Tahoe City Community Plan, the property is shown as entirely 1b.

In contrast to its mapped land capability rating, Kennedy and Rogers have concluded that a large portion of the study area should be classified as Capability Level 5, due to the substantial man modification which has occurred onsite. Their analysis was based on an analysis of the six backhoe pits dug on the site in October, 1990.

Erosion Hazard

According to Bailey (1974), "Slope (length and shape) and climate are evaluated and integrated with soil erodibility to form inherent erosion hazard." Soil erodibility assumes that "... a protective cover of vegetation is not present." Soil erodibility is "... determined by detachability and transportability of soil
particles and is influenced by soil structure, infiltration capacity, and permeability of the soil."

The Payless site is heterogenous but can be viewed as three rather distinct entities that conform generally to the overlay showing site disturbance. The first includes the filled area located on the front portion of the property. Slopes are 1-2 percent, and soil surface horizons include sandy clay loam, loamy coarse sand and gravelly sandy clay loam. The fill material is very tightly compacted and includes areas of dirt road, tire tracks, tarmac and dirt piles. Permeability is very low as witnessed by ponding and TRPA's SEZ report. Largely because of its gentle slope and compacted clay and gravelly soil fraction content (not easily detached or transported), it would be classified as slight erosion hazard (Bailey, 1974).

The second is located between the edge of the fill and the upper drainage ditch. This area has also been disturbed but to a lesser degree. Slopes are 2-3 percent; soil surface texture is loam, and permeability is low. Again, a slight erosion hazard appears justified based on slope, soil structure, and clay content of loam soils.

The third entity is located above the upper drainage ditch and is dominated by Jeffrey pines. It is not part of the mapped Bailey 1b area.

**Vegetation**

To assist in determining the extent to which the site functions as a Class 1b meadow, Ms. Lynda Nelson undertook an evaluation of the plant community characteristics associated with the Payless parcel. Results showed that a substantial portion of the property has been disturbed. Her conclusion was that re-establishment of native or introduced species is unlikely because of the depth of fill material, compaction and lack of nutritive
value of the soil. This conclusion supports Kennedy's assessment that most of the site does not function as a 1b meadow, and that portions of the property would be better categorized as Land Capability District 5, due to the modifications that have occurred.

Summary of 1b Characteristics That Are Man-Modified and New Land Capability Designation

The position taken by Skau, Kennedy, Rogers and Nelson is that Bailey's 1b designation should be changed to Land Capability District 5 as shown on the soils overlay. Notice that a portion of the Bailey 1b district is retained where soil characteristics, wetland vegetation and subsurface water levels correspond to Bailey's descriptions. We believe the remainder is so highly man-modified that it requires a new designation. Land Capability District 5 best approximates its present condition and characteristics.
Recommended Land Capability Districts 1b and 5

Skau, Kennedy, Rogers, Nelson

*1b Area Associated with Drainage Ditches
APPENDIX


3. CTRPA. Files Relating to Payless Site.


17. USDA. Forest Service. Drainage basins. Lake Tahoe Region.
SOIL INVESTIGATION

for

PAYLESS SITE - TAHOE CITY, CALIFORNIA

INTRODUCTION:

A detailed soil investigation was made on a portion of the Payless site (APN 94-90-26 and 22, Placer County) on October 25, 1990. The site is located just west of the intersection of Highways 89 and 28 at Tahoe City. The study area was concentrated on the property's gentle slopes. This work was done at the request of Larry Hoffman, Attorney at Law. The property has been mapped a Stream Environment Zone (SEZ) by the Tahoe Regional Planning Agency (TRPA). However, during the past several decades, the property's natural characteristics have been substantially altered by man. Drainage has been redirected, substantial fill has been imported and distributed over most of the site's natural soils, and vegetation throughout much of the property has been denuded. Considering the disturbed state of the property, the objective of this study was to examine the soils and other related features to determine whether the site effectively functions as a Class 1b Land Capability District.

Class 1b Districts (Stream Environment Zones) have been defined by TRPA as being biological communities that owe their characteristics to the presence of surface water or a seasonal high ground water table. These properties exhibit the ability to rapidly incorporate nutrients into the dense vegetation, while the moist to saturated soils contribute to denitrification.

ENVIRONMENTAL SETTING:

This property is shown on the geologic map for the North half of the Tahoe Basin (Mathews) as being on older lake beds with andesite being adjacent on the west. This area is within the Geomorphic Unit E-2 (Outwash, Till and Lake Deposits). The topography slopes toward Highway 89 to the east. A small area
along the westerly boundary is moderately steep but most of the rest of the study area has a gentle gradient. A drainage ditch located along the base of the steeper topography intercepts surface flow mostly from the adjacent golf course and steeper adjacent slopes. The flow from the ditch enters a culvert near the southwest corner of the parcel. Runoff from the study area is to the Truckee River below the outlet to Lake Tahoe.

The soils have formed from fine textured materials under poor and somewhat poor natural drainage. The soils on the gentler slopes have been altered by filling and grading which was done prior to enactment of grading ordinances.

Most of the study area has sparse vegetative cover. The ground surface has spots where imported materials of gravels, cobbles, stones, pieces of pavement and other litter have been dumped on the site. The disturbed area was compacted during grading operations and additionally by years of vehicle traffic on the site.

PROCEDURES:

A review was made of prior related studies on this parcel. Dr. Ulrich, Soil Scientist, in May, 1979, reported the parcel in part was used for parking heavy equipment and vegetative cover was sparse where covered with sandy fill. Three pits were excavated and water seeped in at 62 to 70 inches. The soils were described as having a sandy fill over silty clay and gravelly clay loam. Davis Earth Scientists in August 1987 described the soil as having a gravelly fill over a dark gray silty clay. Foster Engineering\(^1\) when installing observation wells on the property described the soils as largely dark clays.

A backhoe was used on this investigation to excavate six pits within the gently sloping part of the property for soil

\(^1\)Tahoe City - Lake Forest Plan Area - Soils Investigation - TRPA Davis Consulting Earth Scientists.

\(^2\)Tahoe City Urban Runoff Treatment Facility Hydrogeologic Site Investigation, K.B. Foster Civil Engineering, Inc., August, 1990.
observations. The pits were excavated on October 23, 1990. The soil profiles from each pit were described in some detail. These descriptions are included at the back of this report along with a topographic map showing the location where each was taken. Each sample pit was located in fairly close proximity of a monitoring well installed by Foster Engineering in December, 1989.

**FINDINGS:**

In general, soil conditions were found to be about as described in previous work. The gently sloping part of this parcel was originally an open area having poor to somewhat poor natural soil drainage. Although the site was probably not cultivated extensively, there is evidence to suggest that introduced species were seeded for forage improvement. The soils for the most part had a dark highly organic loam to silty clay loam topsoil and a dark gray silty clay subsoil. Soil profile No.2 is fairly representative of these characteristics. The soils were altered by grading and filling and the surface layer was somewhat compacted. Most of the soils have about 1/2 to 2-1/2 feet fill over the original ground surface. A malt liquor can was found in soil profile No.1 at 25 inches and was resting on the original ground surface. The natural soils appear to have been graded, and covered with dark colored silty clay loams or silty clays much like the underlying material, and then covered with a sandy fill.

Water seeped into 5 of the 6 pits between depths of 42 to 72 inches. Pit No. 2 did not have any seepage and the excavated depth was 68 inches. Despite the lack of seepage this pit was characterized by dark soil colors and a greenish-gray or gleyed substrata.

Soil drainage is poorest at the back of the study area judging from water table levels and some vegetative cover. In general levels are the lowest near Highway 89. Portions to the back of the study area have soils with a fairly long duration of saturation above a 20 inch depth. Nearer to the highway near surface saturation is of short duration during snowmelt and peak runoff
periods and watertables are lower.

Soils at the site have been altered so that the only parts which currently fit the criteria defining Class 1b Land Capability Districts are the man-made drainage ditches (running through the upper portion of the property, adjacent to Lucky's and in the Highway 28 right-of-way), and a small area below the upper drainage ditch. Filling, grading and soil compaction have adversely affected nutrient and soil moisture relationships along with vegetative aspects of the site.

Surface drainage may have also altered some of the relationships associated with the soils in a Class 1b district. The nearby drain may account in part for the absence of free water in the pit for soil Profile No.2.

These soils have very slow infiltration rates and are slowly permeable. They would be classified as being within Hydrologic Soil Group D. Slopes are from 1 to 3 percent for the most part. The relative erosion potential is slight and runoff potential is high.

**LAND CLASSIFICATION:**

The modifications to this property have been sufficient to greatly alter the environmental characteristics. Grading, filling and redirection of water have been principal factors in changing the physical properties from their natural state.

The Land Capability classification of the site has been assessed using detailed information compiled for the property. The basis for classification of lands in the Tahoe Basin is shown on page 20 of the Land Capability Guide for the Tahoe Basin.3

A large portion of the study area should be classified in Capability level 5, based on characteristics of this modified area and the following criteria outlined in the Guide. The slope is 1 to 3 percent, relative erosion potential is slight, and runoff potential is high. This includes most of the fill area where the

SOIL PIT 2
No free water at depth of 68 inches.
surface has been elevated above any natural watertable.

A seep area below the upper drainage ditch and a small area adjacent to the Lucky store have characteristics that would place these in Capability level 1b. These Capability districts are shown on the attached map of the property.

TRPA currently shows all of the study area to be in Capability level 1b. Bailey, as author of the Tahoe Capability Guide, defines subclass 1b only with the term "poor natural drainage." However, it is inferred that these lands are naturally wet for prolonged periods. He stated that the policy for use of these lands should reflect their value for flood water and sediment storage areas, wildlife habitat, and fish spawning grounds. The Upper Truckee Meadows is cited as being a typical site of this subclass. Natural soil drainage classes would have to be defined as very poor, and poor, where near surface water persists for some duration.

The Payless site in its present condition for the most part does not correspond to Capability level 1b. The map on the following page shows the extent of Land Capability Districts 5 and 1b as determined by this study.

CONCLUSIONS:

Due to drainage alterations, introduced fill, resulting vegetative disturbances and compaction, the soils on the Payless site have been modified so that only a small part of the property appears to function as Land Capability District 1b. Restoring the site to its original condition would appear to be impractical in view of the costs and possibilities of accomplishing the task. Furthermore, this endeavor would accomplish little in terms of hydrologic benefits for the Lake Tahoe watershed, the primary purpose of SEZ protection, since the site drains into the Truckee River below the outlet to Lake Tahoe.

Considering the site's existing man-altered state and its drainage into the Truckee River, it is reasonable to suggest that relevant water quality measures would be those applicable to parcels with similar soil conditions which are located in the
Lahontan Basin, but outside of the Tahoe watershed.

Grant M. Kennedy
Certified Professional Soil
Scientist No. 855
National Registry
Recommended Land Capability Districts 1b and 5
Skau, Kennedy, Rogers, Nelson

*1b Area Associated with Drainage Ditches
Soil Profile No. 1

Vegetation - Bare spots and sparse growth of perennial grasses and weeds.

Slope - 1 percent

Drainage - Somewhat poor

C1--0 to 2 inches, brown (10YR 4/3) sandy clay loam, very dark grayish brown (10YR 3/2) moist; weak coarse platy structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; few very fine and fine tubular and interstitial pores; moderately acid; abrupt smooth boundary.

C2--2 to 5 inches, light gray (2.5Y 7/2) loamy coarse sand, grayish brown (2.5Y 5/2) moist; single grained; loose, very friable, non-sticky and non-plastic; common very fine and fine roots; many very fine interstitial pores; moderately acid; abrupt smooth boundary.

IIIC--5 to 11 inches, dark grayish brown (10YR 4/2) silty clay, black (N 2/0) moist; moderately medium platy structure; very hard, firm, sticky and very plastic; common very fine exped roots; few very fine tubular pores; mildly alkaline; abrupt smooth boundary.

C4--11 to 25 inches, dark grayish brown (10YR 4/2) silty clay loam (near clay) with common fine prominent strong brown (7.5YR 4/6) mottles, very dark brown (10YR 2/2) with common fine prominent brown (7.5YR 4/4) mottles, moist; massive, very hard, firm, sticky and plastic; few very fine roots; few very fine tubular pores; mildly alkaline; 5 percent gravels; abrupt smooth boundary.

A1b--25 to 36 inches, dark gray (10YR 4/1) mucky silt loam, black (N 2/0) moist; massive, slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine and fine tubular and interstitial pores; neutral; clear smooth boundary.

A1b--36 to 48 inches, gray (10YR 5/1) silt loam with common fine prominent strong brown (7.5YR 5/6) mottles, very dark brown (10YR 2/2) with common fine prominent brown (7.5YR 4/4) mottles, moist; moderate medium subangular blocky structure;
slightly hard, firm, sticky and plastic; few very fine and fine roots; common very fine, fine and medium tubular pores; neutral; clear smooth boundary.

B2b--48 to 57 inches, light gray (2.5Y 7/2) silty clay with common fine prominent strong brown (7.5YR 5/6) mottles, light gray and pale olive (5Y 6/1, 6/3) with common fine prominent brown (7.5YR 4/4) mottles, moist; moderate medium angular blocky structure; hard firm, sticky and plastic; few very fine tubular pores; neutral; clear smooth boundary.

C1b--57 to 67 inches, light gray (10YR 7/2) clay loam with common fine prominent brownish yellow (10YR 6/6) mottles; gray (5Y 5/1) with common fine prominent dark yellowish brown mottles, moist; massive; hard, firm, sticky and plastic; moderately alkaline; 10 percent gravels.

1) roots go down cracks. Soil is fill to 25". Malt liquor can be found above 25" boundary. Pieces of charcoal from 11 to 25". Matting of fine roots at 25" is indicative of original surface. Mottles follow old root channels below a 36" depth.

Free water was found at 67 inches at time of sampling.


Soil Series: Not defined in Tahoe Basin.
Soil Profile No. 2

Vegetation - Thick growth of perennial grasses and sedges. Several willows.

Slope - 3 percent

Drainage - Poor

Ap--0 to 5 inches, grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; moderate medium and fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots; neutral; abrupt wavy boundary.

A1--5 to 13 inches, dark gray (10YR 4/1) silty clay, black (10YR 2/1) moist; strong medium angular blocky structure; hard, firm, sticky and plastic; common very fine and fine exped roots; neutral; abrupt wavy boundary.

B2--13 to 35 inches, dark gray and gray (10YR 5/1, 4/1) silty clay, very dark gray (10YR 3/1) moist; moderate coarse prismatic structure; very hard, firm, very sticky and very plastic; common very fine and fine exped roots; neutral; clear smooth boundary.

C1--35 to 62 inches, light gray (10YR 7/1) silty clay with black (10YR 2/1) organic stains, moist, massive; very hard; firm, very sticky and very plastic; mildly alkaline; clear smooth boundary.

C2g--62 to 68 inches plus, gray (5Y 5/1) and greenish gray (5GY 5/1) silty clay moist; massive; very hard, firm; very sticky and very plastic; moderately alkaline.

Surface appears to have been disturbed. No free water in pit at time of sampling.

Soil Classification: Fine, mixed, frigid, Typic Humaquept.

Soil Series: Not defined in Tahoe Basin.
Soil Profile No. 3

Vegetation - Dense growth of perennial grasses and sedges.

Slope - 2 percent

Drainage - Poor

C1--0 to 5 inches, light brownish gray (10YR 6/2) loamy coarse sand, dark grayish brown (10YR 4/2) moist; single grained, loose, very friable, non-sticky and non-plastic; many very fine and fine roots; neutral; abrupt smooth boundary.

A1--5 to 20 inches, grayish brown (10YR 5/2) silty clay loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; slightly hard, friable, sticky and plastic; common very fine and fine roots; neutral; clear smooth boundary.

B21--20 to 32, very dark brown (10YR 2/2) silty clay moist; strong medium angular blocky structure; hard, firm, sticky and plastic; common very fine and fine exped roots; neutral; clear smooth boundary.

B22--32 to 40 inches, very dark brown (10YR 2/2) silty clay with few fine distinct dark brown mottles, moist; hard, friable, sticky and very plastic; near neutral, clear smooth boundary.

BC--40 to 54 inches, grayish brown (2.5Y 5/2) and dark gray (5Y 4/1) silty clay with common medium prominent dark brown (7.5YR 4/4) mottles, moist; hard, firm, very sticky and very plastic; mildly alkaline; clear smooth boundary.

C--54 inches plus, grayish brown (2.5Y 5/2) silty clay with few firm prominent yellowish brown mottles, moist; massive; slightly hard, friable, sticky and plastic, mildly alkaline.

Pit filled rapidly with water which was seeping in at 40 inches. Portions of soil profile not characterized because of wetness. Material at 54 inches is old lacusfrine deposits. The surface 5 inch layer is fill.

Soil Classification: Fine, mixed, frigid, Typic Humacuept.

Soil Series: Not defined in Tahoe Basin.
Soil Profile No. 4

Vegetation - Bare spots and sparse cover of weeds.

Slope - 1 percent

Drainage - Somewhat poor

Cl--0 to 15 inches, brown (10YR 5/3) gravelly sandy clay loam, very dark grayish brown (10YR 3/2) moist; moderate coarse platy structure; hard, friable, slightly sticky and slightly plastic; few fine roots; few very fine and fine tubular and interstitial pores; mildly alkaline; 25 percent gravels; abrupt smooth boundary.

Alb--15 to 27 inches, very dark brown (10YR 2/2) silty clay with few fine prominent brown (7.5YR 4/4) mottles, moist; moderate medium angular blocky structure; hard, firm, very sticky and very plastic, few very fine and fine exped roots; few very fine tubular pores; neutral; clear smooth boundary.

B2b--27 to 42 inches, black (N 2/0) silty clay with common medium prominent brown (7.5YR 4/4) mottles, moist; massive, very hard, firm, very sticky and very plastic; few very fine roots; moderately alkaline; clear smooth boundary.

Clb--42 to 55 inches, gray and olive gray (5Y 5/1, 5/2) very gravelly silty clay loam (near silty clay) with common medium prominent brown (7.5YR 5/4) mottles, moist; massive, hard, firm, sticky and plastic; moderately alkaline; 35 percent gravels; clear smooth boundary.

C2g--55 inches plus, greenish gray (5GY 5/1) very gravelly sandy clay loam, moist; massive, hard firm, sticky and plastic; moderately alkaline; 35 percent gravels.

Water seeping into pit at 42 inches in gravelly area. Mottles are in old root channels. The top 15 inches of profile is fill materials.

Soil Classification: Fine, mixed, frigid, Typic Humiculept.

Soil Series: Not defined in Tahoe Basin.
Soil Profile No. 5

Vegetation - Bare spots and sparse growth of weeds.

Slope - 1 percent

Drainage - Somewhat poor

C1--0 to 3 inches, gray and light brownish gray loamy coarse sand, dark brown (10YR 3/3) moist; single grained; loose, very friable, non-stick and non-plastic; common very fine and fine roots; many fine and very fine interstitial pores; neutral; abrupt smooth boundary.

C2--3 to 28 inches, grayish brown (10YR 5/2) very gravelly clay loam, very dark grayish brown, moist; massive to weak coarse platy structure; hard, friable, sticky and plastic; few very fine roots; neutral; 35 percent gravels; abrupt wavy boundary.

Ab--28 to 46 inches, gray and light gray (10YR 5/1, 6/1) silty clay, black (N 2/0) moist; moderate medium angular blocky structure; hard, firm; sticky and plastic; neutral; clear smooth boundary.

B2b--46 to 63 inches, light gray (2.5Y 7/2) gravelly sandy clay loam with common fine prominent strong brown (7.5YR 5/6) mottles; olive gray (5Y 5/2) with common fine prominent strong brown (7.5YR 5/6) mottles, moist; moderate medium subangular blocky structure; hard, friable, sticky and plastic; mildly alkaline; 30 percent gravels; clear smooth boundary.

CLgb--62 inches plus, greenish gray (5GY 5/1) and very dark grayish brown, very gravelly sandy loam, moist; massive, slightly hard; friable, non-sticky and non-plastic; mildly alkaline; 50 percent gravels, medium prominent brown mottles, moist.

Water seeping into pit at 63 inches. Top 28 inches is fill.


I' Bottom half of horizon 19 to 27 inches has common brown '7.5YR 4/4' mottles when moist.
Scil Profile No. 6

Vegetation - Bare spots and areas with sparse growth of weeds.

Slope - 2 percent

Drainage - Somewhat poor

C1--0 to 3 inches, light gray (2.5Y 7/2) loamy coarse sand, dark grayish brown (2.5Y 4/2) moist; single grained, loose, very friable, non-sticky and non-plastic; common very fine roots; many very fine interstitial pores; neutral; abrupt smooth boundary.

C2--3 to 12 inches, grayish brown (10YR 5/2) gravelly sandy clay loam, very dark grayish brown (10YR 3/2) moist; weak coarse platy parting to moderate medium angular blocky structure; hard, friable, slightly sticky and slightly plastic; few very fine roots; neutral; 20 percent gravels; abrupt smooth boundary.

C3--12 to 25 inches, grayish brown (10YR 5/2) gravelly sandy clay loam, very dark grayish brown (10YR 3/2) moist; massive; hard, friable, slightly sticky and slightly plastic; very few very fine roots; neutral; 20 percent gravels; abrupt wavy boundary.

Ab--25 to 42 inches, black (N 2/0) silty clay with common fine prominent brown (7.5YR 4/4) mottles, moist; massive; very hard, firm, sticky and plastic; neutral; clear smooth boundary.

B2b--42 to 52 inches, dark gray (5Y 4/1) silty clay, moist; massive; very hard, firm, sticky and plastic; mildly alkaline; clear smooth boundary.

C1gb--52 to 72 inches, greenish gray (5GY 6/1) silty clay; massive; very hard, firm, sticky and plastic; moderately alkaline; abrupt wavy boundary.

IIICg--72 inches plus, very gravelly somewhat indurated, pan mottled on upper contact and gleyed underneath.

Water seeped in pit at about 72 inches but did not rise in pit. Top 28 inches is fill. Many fine roots at 28 inches (contact between fill and original ground surface).

Soil Classification: Fine loamy, mixed, frigid Aquic Xerorthent without or strongly ill. Fine, mixed, frigid Typic Humuscept.
VEGETATIVE REPORT ON MAN-MODIFIED ACTIVITIES
ON THE PAYLESS PARCEL,
TAHOE CITY, CALIFORNIA

INTRODUCTION

This evaluation will deal with plant community characteristics on the Payless Parcel, Tahoe City, California, prior to and following any man-modification work on the site. It will also examine whether or not this site appears to be currently functioning as a Land Capability District 1b. 1b Districts characteristically exhibit the ability to rapidly incorporate nutrients into the dense vegetation, while the moist to saturated soils contribute to denitrification.

A detailed botanical investigation was conducted on the Payless parcel (near the "Y" in Tahoe City, CA) in the fall of 1990. The majority of plants examined were identifiable as to genus and species with the exception of only a few, which are referred to in the report as "sp." for (species not known).

METHODOLOGY

The Payless parcel was divided into four map units after an initial field reconnaissance was done. These four map units are noticeably different from one another in topography, species composition, forage production, plant cover and depth of fill material (Nelson, 1990). For the sake of consistency, the species in each of the map units was assigned a "wetland rating" of either obligate, facultative, facultative wetland, or facultative upland. These ratings are commonly used by the U.S. Army Corps of Engineers in defining the degree of hydric vegetation. All species within each of the map units was identified and listed appropriately.
RESULTS

Map Unit #1 which occupies all the ditch area bordering the parcel to the east and south is dominated by native "obligate" wetland species. According to the TRPA guide for "Vegetation of the Lake Tahoe Region", this area would equate to Type "O", swamps and pools, with the dominant species of Carex rostrata and Scirpus microcarpus. (See Appendix attached to the back of this report.) Ten to fifteen incidental species occur within Map Unit #1 and would qualify as Type 2, Herbaceous, in the TRPA planning guide; however, the majority of this map unit would be Type O because of the presence of water the majority of the year and the dominant species present. Total estimated dry weight production is 1000-1200 lbs/acre with an average percent canopy cover of the vegetation of 85 percent. The majority of this type has not had fill material added and has been functioning as a 1b Land Capability District. 1b Districts have the unique ability to process and uptake nutrients for processing and eventual denitrification, as well as binding the soil for erosion control. Manning (1988), found that root length density and root mass were double the amounts of above ground biomass found in sedge communities of Northern Nevada. Root length is a critical parameter in assessing the erosion control potential of a given community, and is directly related to nutrient and water availability.

Map Unit #2 is located parallel to the ditch along the northern border of the parcel. This area is dominated by a mix of native and introduced graminoid species; Phleum pratense, Timothy, a facultative wetland species, Poa pratensis, Kentucky Bluegrass, a facultative upland species and Agropyron trachycaulum, slender wheatgrass, a non-indicator species. Hordeum brachyantherum, meadow barley, a facultative wetland species also occupies a fairly large portion of this area. According to the guide, "Vegetation of the Lake Tahoe Region", this map unit would equate to Type 2, Wet Mesic Meadow. This area has undergone minimum disturbance with the
exception of the diversion ditch constructed for moving water around the parcel and eventual discharge into the Truckee River. A road and culvert were constructed through a small portion of this map unit (upper NE corner). Total estimated dry weight production is 600-700 lbs/acre with an average percent canopy cover of the vegetation of 65-75 percent.

Map Unit #3 is located south of Map Unit #2 along the northcentral portion of the Payless parcel. This area is similar to Map Unit #3 in terms of species composition but has had prior surface disturbance and fill material added. It is therefore considered to be a transition zone (ectone) between Map Unit #2 and #4. Re-establishment of native and introduced graminoids has occurred over much of the unit. Kennedy (1991), reports in his Soils Investigation Report on the Payless site that fill material to a depth of 5 inches occurs in the majority of this map unit.


In terms of TRPA vegetation types, this Map unit would equate to a combination of Type 1A (Bareground disturbed) and Type 2 (Herbaceous, Wet Mesic Meadow). As to whether or not this area is functioning as a 1b, we should take into account the lack of vegetative cover and lack of above and below ground biomass. This map unit is functioning only slightly if at all as a 1b meadow in terms of vegetation. The primary species are grasses and weedy species which contribute only slightly to erosion control and nutrient uptake over the long term. Total estimated dry weight production is 400-500 lbs/acre with an average percent canopy cover
of the vegetation of 45-60 percent.

Map Unit No. 4 is located throughout the central portion of the parcel. This area is comprised primarily of disturbed site annual and biennial weedy species. There is a large amount of bareground present (80-85%) with only (10-15%) vegetative cover. Total estimated dry weight production is 100-150 lbs/acre. This map unit has undergone more disturbance and vegetative manipulation than any of the other three map units. The average depth of fill material reported in this area is 2-2 1/2 feet. The soil is highly compacted with very little pore space and low nutritive value. Currently, the site is dominated by tarweed, *Madia gracilis*, a facultative upland species, *Arenaria sp.*, a facultative species, and knotweed, *Polygonum aviculare*, a facultative species.

In terms of TRPA Vegetation types, this area would equate almost solely with the Type 1A (Bareground-Disturbed). This area in reality is functioning only slightly if at all as a 1b. The compacted soil layer has increased surface run-off potential and reduced infiltration so that surface water is reduced from above (Skau, 1991). Re-establishment of native or introduced graminoid species is highly unlikely because of the depth of fill material, compaction and lack of nutritive value of the soil. Above and below ground biomass, essential for erosion control and nutrient uptake are totally devoid, with only small fibrous annual roots able to penetrate the compacted soil. Restoration or re-establishment of this site as a 1b would involve excavating existing fill material and re-creating vegetative pads of wetland and riparian species for site specific planting. This may not be cost effective in light of the fact that run-off from the Payless parcel drains into the Truckee River.

Conclusion

Only a small portion of the Payless parcel is functioning as 1b (Map Unit #1 and #2, see exhibit below). The majority of the
parcel has undergone significant man-modifications throughout its history. This parcel which is now categorized land capability class 1b, may be better suited as a Class 5 (at least portions of it) because of the modifications that have occurred.
June 3, 1991

To: Advisory Planning Commission
From: TRPA Staff
Subject: Amendment of Regional Plan Land Capability Overlay Map (C-7) for the Tahoe City Community Plan Area

Agency staff is proposing to amend the TRPA Land Capability Overlay Map (C-7) as a component of the Tahoe City Community Plan adoption process. The current land capability overlay maps were adopted by TRPA in 1987 pursuant to Chapter 12 of the Code of Ordinances. A summary of the information available relating to the land capability investigation report for the Tahoe City Community Plan area is described in the findings below. TRPA is proposing the amendments to the Land Capability Overlay Map (C-7) pursuant to the Community Plan process set forth in Chapter 14.6 of the Code of Ordinances, specifically Subsection 14.6.C(2) and (3) of that Chapter. Additionally, the provisions of the 1988 Water Quality Management Plan for the Lake Tahoe Region (208 Plan) call for TRPA to precisely identify and map stream environment zone (SEZ) areas prior to the approval of any Community Plan (Volume I, p.132). This amendment will update and change the designated land capability in the Tahoe City Community Plan area as shown on the attached map. Special Policy #7 of the Tahoe City Planning Area Statement (PAS 001A) states that TRPA will assist with a study of the entire area to identify areas that are man-modified in accordance with Chapter 20 of the Code of Ordinances. A discussion of the man-modified findings for this area are also addressed in the findings below.

Findings

The procedures used to amend the TRPA Land Capability Overlays are set forth in Chapter 20.2.E of the Code of Ordinances. The process in this case was initiated by TRPA as a part of the Tahoe City Community Plan.

A land capability report was prepared for the Tahoe City Community Plan area by Davis' Consulting, Earth Scientists under contract to TRPA. The team of experts employed by Davis' included Sid Davis, Grant Kennedy and Lawrence Welch, Soil Scientists, and C. N. Skau, Ph.D., Hydrologist. The attached report covers an area 282 acres in size and contains information concerning the soils, geomorphology, topography, surface and subsurface hydrology, vegetative characteristics and related environmental factors pertaining to the land capability of the area.

/gss
4/26/91

AGENDA ITEM IV F.
Amendment of Regional Plan
Land Capability Overlay Map (C-7)

Field work for this land capability report was started in August 1987 with the initial soils investigations. During the following two months, additional soil testing, hydrologic evaluations and field inspections were conducted to prepare the proposed land capability amendments. The area was studied using soil mapping and classification techniques which utilize the Soil Survey of the Tahoe Basin Area, aerial photography, U.S. Geological Survey topographic quadrangle maps and on-site soil observations. Areas exhibiting soil characteristics or hydrologic conditions which were determined to be different than as mapped were intensively examined.

Since the fall of 1987, some additional field work relating to land capability and hydrology of this area has been completed, and those reports available to TRPA staff have been reviewed and incorporated into these findings. In the spring of 1988 Wayne Sheldon, Soil Conservation Service Area Soil Scientist, was asked by TRPA review the findings of Davis' report. A copy of his May 16, 1988 memorandum to Gordon Barrett pertaining to the Tahoe City Soil Investigations is attached. There were seven representative soil profiles described in the land capability report which are supported by numerous observations points (see April 17, 1991 letter from Sid Davis) that were used to identify the soil characteristics of the major soil map units. Auger holes and vegetative species were used to assess the subsurface hydrologic conditions and identify stream environment zone (SEZ) areas. Additionally, the report entitled, "Hydrologic Site Investigation, Tahoe City Urban Runoff Treatment Facility" (Fenske, 1990) was reviewed, and the depth to groundwater information was incorporated into our findings related to the hydrology of a specific 3.69 acre parcel within the Community Plan area.

The land capability report was broken into four areas of study divided by major roadways, streams or other land forms. The findings related to each of the areas are as follows:

**Cathedral Drive North to the Truckee River**

This area is mapped as land capability 5 associated with the Tallac and Jabu soil series, with areas of class 1b associated with the gravelly alluvial lands and beaches. The upper areas, south of the Tahoe Tree Company, were verified as mapped, land capability class 5 associated with the Tallac soil series. The lower areas displayed characteristics of SEZ with soils which were seeped in the transition zone to the flat alluvial soils which were poorly and very poorly drained. The flat alluvial soils which are well drained gravelly sandy loams are best classified as land capability class 5. These soils are similar to the Tallac (TcB, gravelly coarse sandy loam, seeped, 0 to 5 percent slopes) soil map unit, except that these soils were formed as a result of alluvial deposition rather than glacial deposition.

**Quarry Area**

The quarry area was verified as mapped, pits and dumps, land capability class

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1c. The area between Highway 89 and the Truckee River was verified as mapped, land capability class 5 and 1b. The SEZ lands verified as class 1b are associated with the gravelly alluvial lands (Gr) and are within the Truckee River flood plain. A small area west of the quarry was verified as mapped, land capability class 2. Although there are some minor boundary line adjustments, there are no changes in land capability in this area.

Fairway Drive Central Core Area

The majority of this large area is mapped as SEZ, land capability class 1b, associated with the gravelly alluvial land (Gr) soil map unit. The remaining upslping lands in this area are mapped as land capability class 6 and 5. The soils found in the concave areas of the golf course and to the west were moderately fine and fine textured soils associated with old lake beds. These soils have evidence of high water tables. The depth to groundwater in the proposed land capability district varies seasonally from 40 inches to the surface. Some portions of this area have a surface horizon comprised of fill material which has been imported and compacted. The extent and depth of the fill material varies throughout the area and does not significantly alter the soil profile (see April 17, 1991 letter from Sid Davis). These areas which have been disturbed by grading may be restored by removal of the fill material which would allow riparian vegetative growth. While these soils are not identified in the Soil Survey, they do have the texture and color of an inclusion described in the gravelly alluvial land (Gr) map unit. Based on these findings, the soil labeled in the land capability report as "Soil B" is very poorly drained and exhibits the characteristics of near surface wet soil conditions and is best classified as land capability class 1b.

The terrace along Highway 28, which encompasses most of the commercial core area of Tahoe City, has soils which are moderately well drained gravelly clay loams underlain by cemented lake sediments, similar to the Jabu moderately fine subsoil variant soil series. This area is best classified as land capability class 5.

The areas along the Lake frontage and below the terrace exhibit wet soil conditions and are complexes of beach and gravelly alluvial soils. These areas are classified as land capability class 1b.

Grove Street and East

This area is predominately mapped as land capability class 5 associated with the Fugawee soil series. There are small areas of class 6 associated with the Jabu soil series and 1b associated with gravelly alluvial land (Gr). The areas mapped as the Fugawee soil series were verified based on physical inspection of the soils in several undisturbed locations. The Tahoe City Creek has been rerouted and straightened to a channel which flows due south to Lake Tahoe. The

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soils which were developed from the former drainage channel are shallow, seeped sandy loam soils, most similar to the Jabu (JbD) soil map unit. These areas are classified as land capability class 3. The soils found in the area east of Tahoe City Creek and the State Park campground were found to have physical properties similar to the mapped Jabu (JhC) soil map unit. This area remains as mapped, land capability class 5.

The area at the far eastern end of the community plan area was mapped as SEZ, land capability class 1b. This area exhibits the characteristics of a wet meadow with poorly drained soils, which are consistent with the gravelly alluvial land (Gr) as mapped.

**Man-Modified Analysis**

The Tahoe City Community Plan area is extensively developed with existing buildings, parking lots, roads and houses. Many of the undeveloped areas have been subjected to varying levels of disturbance as a result of man’s actions or previous uses. During the course of the soils investigations and hydrologic analysis for the Community Plan area, the vacant undeveloped parcels were studied most extensively since they can be evaluated with the least disruption to the existing uses. Pursuant to the procedures set forth in Chapter 20 of the TRPA Code of Ordinances, the first step of the land capability determination is to analyze the physical properties and characteristics of the soils, slope, vegetation, hydrology and geomorphology. Based on the findings of the field evaluations, if there is "information showing that the land in question was modified by man’s placement of fill, dredging or grading, in so substantial a fashion as to generally exhibit the characteristics of a land capability district other than the one depicted for said land on the TRPA Land Capability Overlays", then it is reasonable to proceed with a man-modified report. The man-modified report is required to include essentially the same information relating to the physical properties of the site as is included in the land capability determination. A key component of the man-modified soils analysis is to assess, based on the characteristics of the soils which are present as a result of the modification, what is the land capability of the modified soils.

To proceed with a man-modified determination once the land capability information has been completed and appropriate land capability has been determined for the property, TRPA must make all of the six findings in Subsection 20.2.F(3) of the TRPA Code of Ordinances before amendments to the land capability overlays can be made. A copy of applicable sections of Chapter 20 of the TRPA Code of Ordinances, pertaining to man-modified areas, is attached.

In the Tahoe City Community Plan area, the results of the land capability determinations found that most of the lands continued to exhibit physical
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properties and characteristics that would keep them in the same land capability as the current TRPA land capability overlay maps. In some areas the physical properties and soil characteristics were different than as mapped, but not as a result of man's modifications. These areas were assigned the representative soil map unit and appropriate land capability classification. Of the vacant lands evaluated where there was evidence of man's alterations, disturbances or modifications to the land, the physical properties or characteristics were not modified to the extent that the land capability no longer exhibited the characteristics of the original land capability classification.

Those areas which have been developed and have been covered by buildings, parking lots, roads or houses, any have been modified to the extent that the land capability is different than as originally mapped. These properties could proceed with the man-­‐modified procedure, but it is highly unlikely the owners of the properties would want to commit to finding (f) of the six required findings (see Code Section 20.2.F(3) attached), since it would require them to provide for either on-­‐site or off-­‐site mitigation for the losses caused by the modification. In most cases, the currently developed properties have an existing legal use and more existing land coverage than would be allowed under the man-­‐modified land capability.

Based on the above information, it was TRPA staff's assessment that there was insufficient justification to proceed with an area wide man-­‐modified determination since, in the cases of the vacant parcels, finding (c) could not be made and in many cases it would be difficult to make finding (d). For the developed properties, it is inappropriate for Agency staff to make commitments for the property owners regarding on-­‐site or off-­‐site mitigation pursuant to finding (f). These conclusions do not preclude individual property owners from conducting their own land capability investigations and filing for a man-­‐modified determination pursuant to Chapter 20.2.F of the TRPA Code of Ordinances, if they feel there is sufficient information to support the required findings.

Staff Recommendation

The TRPA staff has inspected the area and supports the findings and conclusions of the land capability report prepared by the team of experts. The attached Land Capability Map (C-­‐7) identifies the boundaries of the proposed land capability districts, as defined in the land capability report and staff summary. While certain portions of the central Tahoe City area have been disturbed by grading and importation of fill material, the information and evidence provided by field inspection and from the team of experts does not support the required findings for man-­‐modified determinations as set forth in Section 20.2.F(3) of the TRPA Code of Ordinances. The staff recommends that the Advisory Planning Commission recommend to the Governing Board approval of the proposed Regional Plan Amendment to change the Land Capability Overlay Map (C-­‐7) for the Tahoe City Community Plan Area.

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(b) Creation Of New Land Capability Districts Or Geomorphic Units: Creation of a new land capability district on the Land Capability Overlays, which new district shall be five contiguous acres or more in area, or creation of a new geomorphic unit, which new unit shall be one square mile or more in area, unless smaller, more precise mapping units are adopted by TRPA, in which event the smaller units may be used.

(6) Procedure After Amendment: Once TRPA has completed its action on an amendment to the Regional Plan pursuant to Subsection 20.2.E, it shall follow the procedure set forth in Subparagraph 20.2.C(6) as though it applied to an amendment to the Regional Plan pursuant to Subsection 20.2.E, including, but not limited to, the report prepared for and action on the amendment.

20.2.F Amendment Of Land Capability Overlays For Man-Modified Areas: The TRPA Land Capability Overlays may be amended for man-modified areas through an amendment of the Regional Plan in the manner set forth in this Subsection. The amendment may be initiated by TRPA or the owner of the pertinent land, provided there is sufficient information demonstrating a reasonable possibility the requirements of this Subsection can be met.

(1) Team Of Experts: An amendment of the Regional Plan pursuant to this Subparagraph shall be evaluated by the team of experts referred to in Subparagraph 20.2.D(1) under the conditions set forth in that Subparagraph.

(2) Man-Modified Report: The team of experts shall prepare a man-modified report analyzing the proposed plan amendment. The report shall contain information showing that the land in question was modified by man's placement of fill, dredging or grading, in so substantial a fashion as to generally exhibit the characteristics of a land capability district other than the one depicted for said land on the TRPA Land Capability Overlays. In addition to the foregoing information, the man-modified report shall contain the following concerning the pertinent land:

(a) A statement of geomorphic characteristics;
(b) An analysis of surface and subsurface hydrology;
(c) A statement of physical and chemical soil characteristics;
(d) An analysis of erosion hazard;
(e) An analysis of vegetation;
(f) A statement identifying the land capability characteristics resulting from the modification and an opinion by the team identifying the land capability district generally exhibiting those characteristics; and
(g) Additional information reasonably required by TRPA to properly assess the merits of the application.

(3) Action on Amendment: An amendment of the Regional Plan pursuant to Subsection 20.2.F shall be processed, both procedurally and substantively, in the manner of amendments to the Regional Plan generally. The amendment may be approved if TRPA finds that:

(a) The land was modified prior to February 10, 1972;
(b) Further development will not exacerbate the problems resulting from the modification of the land and will not adversely impact sensitive lands adjacent to or nearby the man-modified area;
(c) The land no longer exhibits the characteristics of land bearing the same, original land capability classification;
(d) Restoration of the land is infeasible because of factors such as the cost thereof, a more positive cost-benefit ratio would be achieved by offsite restoration, onsite restoration would cause environmental harm, restoration onsite would interfere with an existing legal use, and the land is not identified for restoration by any TRPA program;
(e) Further development can be mitigated offsite; and
(f) Mitigation to offset the losses caused by modification of the land and pertinent land capability district, shall be as follows:

(i) Onsite and offsite mitigation;
(ii) Pursuant to a maintenance program, including schedule of maintenance, proposed by the owner and approved by TRPA; and
(iii) Collection of a security, if deemed necessary by TRPA, to guarantee mitigation.

(4) Effect Of Approval: If the amendment is approved, the land coverage limitations of the land capability district, whose characteristics are exhibited by the pertinent land, shall apply to the land.

(5) Conditions Upon Amendment: Approval of an amendment of the Regional Plan pursuant to Subsection 20.2.F may be granted subject to reasonable conditions in addition to those otherwise referred to in such Subsection.

(6) Procedure After Amendment: Once TRPA has completed its action on an amendment to the Regional Plan pursuant to Subsection 20.2.F, it shall follow the procedure set forth in Subparagraph 20.2.C(6) as though it applied to an amendment to the Regional Plan pursuant to Subsection 20.2.F, including, but not limited to, the report prepared for and action on the amendment.

20.3 Land Coverage Limitations: No person shall create land coverage in excess of the limitations set forth in this chapter. The means to determine base land coverage, the manner to transfer land coverage and prohibitions of certain land coverage are set forth in this Section.

20.3.A Base Land Coverage Requirements: The allowable base land coverage ("base coverage") shall be determined by using the coefficients set forth in the report entitled, Land Capability Classifications of the Lake Tahoe Basin, Bailey, R. G. 1974. These coefficients are:

<table>
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<th>Lands Located In Land Capability District*</th>
<th>Base Coverage</th>
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<tbody>
<tr>
<td>1a, 1b, 1c</td>
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<tr>
<td>2</td>
<td>1%</td>
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<td>3</td>
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<td>5</td>
<td>25%</td>
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<tr>
<td>6, 7</td>
<td>30%</td>
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</tbody>
</table>

*Lands located in Geomorphic Group I are classified land capability district 1 and are permitted one percent coverage.
Tahoe City - Lake Forest Plan Area
Soils Investigation
for
Tahoe Regional Planning Agency

Introduction:
This is a report of soils and stream environment zones in the Tahoe City area and Lake Forest plan areas. It was performed by DAVIS Consulting Earth Scientists in association with Mr. Grant M. Kennedy, Mr. Lawrence E. Welch, Soil Scientists and Dr. Clarence M. Skau, Hyrologist, at the request of the Tahoe Regional Planning Agency (TRPA) to verify Land Capability (Code of Standards, Subchapter 20) and to identify stream environment zones using two methods; (1) Those described in Chapter 3, Volume II of the Handbook of Best Management Practices; (2) Those described in Section 37.3 of the TRPA Code.

Field work for this project was conducted in August, September and October, 1987. In general the area comprises the commercial area of Tahoe City along Highway 89 and Highway 28 and in the Lake Forest area, that portion of commercial property either side of Lake Forest road, south of Lake Forest Glen Unit No. 1 (please refer to the attached maps for the exact boundary delineations).

Because of the size and complexity of the study area, the report narrative is broken into smaller areas generally divided by major roadways, streams or other land features to relate pertinent information regarding Land Capability verifications.

Procedure:
The areas were studied utilizing existing TRPA soils mapping, aerial photography (U.S.D.A.-U.S. Forest Service, 1939, 1972, 1983; Cartwright Aerial Surveys, 1962; Andragg Inc., 1964-65; U.S.D.A. Soil Conservation Service, 1967), and U.S. Geological Survey 7.5 minute quadrangle of Tahoe City (1969 photo revised). The area was also reconnaissance surveyed on the ground. Areas exhibiting soil physical properties, drainage conditions or vegetation patterns determined to be different than presently mapped were more intensively examined, using soil auger borings or by road cut inspections. The soil in the quarry on th
western border of the study area was described in a backhoe pit. Vegetation species and growth patterns were used as indicators of soil drainage conditions in some cases.

Area 1 - Lake Forest

Environmental Setting:

This area is shown on IRPA map sheet D6 (Douglas Point) to be mainly within a delineation of JhC (Jebu stony sandy loam, moderately fine subsoil variant, 2 to 9 percent slopes) with a smaller portion represented as Gr (Gravelly alluvial land). The geology map (Mathews, 1968) shows this area to be within a unit of Q1 (Recent lake beds). The geomorphic analysis (Bailey 1974) shows this area to be within two delineations, E2 (Outwash, till, and lake deposits) and E3 (Alluvial lands).

Typical vegetation is Jeffrey pine (Pinus jeffreyi), wyethia (sp.), bitterbrush (Purshia tridentata) and perennial grasses. A drainage way along Main Street displayed willow (salix), elder (Alnus rhombifolia) and perennial grasses.

Topography in the study area is fairly level with an incised drainage (piped at depth) running north to south through the west - central portion. This area receives local storm drainage from the north, east and west.

The Lake Forest area is heavily developed with small lots consisting of both residential dwelling units and commercial establishments.

Findings:

All of the area with the exception of a narrow strip of land adjacent to Main Street was found to be fairly uniform with respect to soil type. It exhibited a grayish brown medium acid gravelly sandy loam surface over a light yellowish brown massive brittle and hard gravelly clay loam subsoil. This unit occurs on the western side of the area and was verified on the northeast side as well. A typical profile description was taken near the intersection of Aspen Street and Hillcrest Avenue in the abandoned roadway alignment.

The area along Main Street exhibited a very dark grayish brown mixed very gravelly fill over mottled black and dark grayish brown loam underlain by mottled dark brown, reddish yellow and strong brown silt clay loam. The mottled colors are indicative of wetness. The representative soil profile description was taken at the intersection of Hillcrest Avenue and Main Street.

Conclusions:

The majority of the Lake Forest area is placed in soil unit JhC (Jebu stony sandy loam, fine subsoil variant, 2 to 9 percent slopes). The area adjacent to

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Main Street is placed in the unit Lo (Loamy alluvial land).

JHC receives Land Capability class 5 with 25 percent allowable coverage. Lo is placed in Land Capability class 1b with an allowable 1 percent impervious coverage. Please refer to the attached map for delineation of the Land Capability districts.

- Area 2 - Tahoe City; Cathedral Drive north to the Truckee River

Environmental Setting:

This area comprises the land from approximately 450 feet north of Cathedral Drive, 500 feet west of Highway 89 to Tonopah Drive. It spreads westward from Tonopah Drive to the Truckee River and includes both private and U.S. Forest Service ownership. Land north of Tahoe Tavern, including Tavern Shores, is also included in Area 2.

This area is shown on IRPA map sheet C-7 as having three soil delineations: TdD (Tallac stony coarse sandy loam, 5 to 15 percent slopes); JHC (Jabu stony sandy loam, fine subsoil variant, 2 to 9 percent slopes); Or (Gravelly alluvial land). The geology map, by Mathews (1968), shows this area to be in delineations of Qlo (Older lake beds) and Qm (Glacial moraines). The geomorphic analysis by Bailey (1974) of this area shows delineations E1 (Moraine land undifferentiated) and E2 (Outwash till and lake deposits).

The area has three fairly distinct landforms: a high bluff composed of glacial till materials; an intermediate terrace; and lower position flat lands. The two lower position landforms consist of lacustrine sediments with seeps and springs surfacing along transitions zone from high to low topography.

Typical vegetation is white fir (Abies concolor), Jeffrey pine, Incense cedar (Libocedrus decurrens) and manzanita in the well drained areas. Seeps display willow, elder, sedge and juncus.

Findings:

Soils were found to be different on each land form. The upper unit was determined to be the Tallac series as presently mapped and no further investigation of that unit was carried out.

The intermediate land form west of Highway 89 was found to display a well or moderately well drained slightly acid brown sandy loam surface over a yellowish brown gravelly sandy loam subsoil, underlain by brittle dark grayish brown sandy loam lacustrine parent materials. This soil was examined in a construction pit at the intersection of Tonopah Drive and Highway 89. The representative pedon was described

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from an auger boring, near the southwest corner of Comstock Village. This unit extends north of Tonopah Drive to the slope break where seeps and springs surface to ponding. Soils surrounding the ponds in this area are somewhat poorly and poorly drained with color mottling and riparian vegetation as indicators of wetness.

The well or moderately well drained soils are similar to the Jabu series as mapped in the Lake Tahoe Basin. The somewhat poorly drained soils resemble the Jabu, seeped, soil.

Lower position soils are derived from alluvium of mixed sources. Most of the area displays a well drained grayish brown slightly acid gravelly sandy loam surface over pale brown slightly acid very gravelly sandy loam. This soil has the same taxonomic classification as the Telfec series. It has similar hydrologic properties. This low position soil has not been previously recognized in the Tahoe Basin and differs from other established units because it has formed from river flood plain materials rather than from glacial sources. It lacks a fragipan at depth.

A wet soil area along the intermediate to low position transition zone adjacent to the Jabu seeped unit was found to have the same properties as Gr (Gravelly alluvium), originally mapped nearby. It was poorly or very poorly drained. Inspection of aerial photography between 1964 and 1965 showed that fill material had been placed along the terrace transition zone.

A strip of land influenced by wetness along the Lake front also has properties similar to Gr or Be (Beaches) where wave action from the Lake has routinely reworked alluvial materials.

Conclusions:

Soils displaying characteristics similar to Jabu are placed in the soil unit JaC (Jabu coarse sandy loam, 0 to 9 percent slopes) and in Land Capability class 5. This unit is assigned an allowable coverage of 25 percent. The Jabu seeped unit is placed in JbD (Jabu coarse sandy loam, seeped, 2 to 15 percent slopes) and receives Land Capability class 3 with 5 percent allowable coverage.

The soil unit with properties similar to Telfec soils, for the purpose of this report, will be called “Soil A” and would be placed in Land Capability class 5. This soil is assigned 25 percent allowable coverage. Gr (Gravelly alluvium) and Be (Beaches) are assigned Land Capability class 1b with 1 percent allowable coverage.

- Area 3 - Tahoe City; The quarry and west

Environmental Setting:

This area is located west of Fairway Drive and north of the Truckee

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River. Some of the area has been previously used as a gravel quarry. Several hundred vertical feet of sand and gravel material have been excavated from the mountainside. A leveled surface is currently being utilized as parking for the rafting industry and as a construction corporation yard for heavy equipment maintenance and storage. It is shown on TRPA map sheet C7 as being within soil unit Px (Pits and dumps). Five commercial lots, extending from the quarry to the western study boundary, are steeply sloping down to Highway 89. Leveled parking areas surrounding buildings have been excavated into the hillsides, and paved.

Between Highway 89 and the fence surrounding the maintenance yard at the quarry site, Jeffrey pine and willow has been established by landscaping efforts. Leveler areas of the quarry were void of vegetation. Cut slopes ranged from 40 to 68 percent and were sparsely vegetated with rabbitbrush (Chrysothamnus viscidiflorus) and mountain whitethorn (Ceanothus cordulatus). Slopes under 50 percent were moderately vegetated.

The area south of Highway 89 is mostly associated with the Truckee River floodplain and alluvial terraces. Portions of the properties along the River are shown to be influenced by the Standard Protected Flood, (Dept. of the Army, Sacramento District, Corps of Engineers, 1971). The geology map (Mathews, 1968) shows this area to be within two units, Tv2 (andesite) and Q1o (Older lake beds). The geomorphic analysis (Bailey, 1974) shows this site to be in units D1 (Toe slope lands) and E2 (Outwash, till and lake deposits).

Riparian vegetation, largely willows and alders, grows along the Truckee River floodplain.

Findings:

A backhoe pit was examined in the leval portion of the quarry area, near the western fence separating the corporation yard from the parking lot. This pit displayed a very tightly compacted, platy, olive brown very gravelly sand and sandy loam surface over mixed very tightly compacted massive very dark grayish brown very gravelly sandy loam and sandy clay loam, underlain by stratified beds of light olive brown silt. The excavation was moist from 14 to 54 inches. The steep cut-slopes surrounding the quarry had a thin mantle of loose mixed andesitic and gravelly colluvial material over exposed older lake terrace.

The area west of the quarry consisted of soils derived from andesite resembling the Jorge soil series.
Conclusions:

Most of the quarry area is disturbed and absent of soil processes. It is presently accurately mapped as Pk (Pits and dumps). This unit is assigned Land Capability class 1c with 1 percent allowable coverage.

A small portion of the quarry site and the area west of the quarry, excluding paved parking areas and structures, is representative of the soil unit JwF (Jabro-Tahoe very stony sandy loam, 30 to 50 percent slopes). This unit is assigned Land Capability class 2 with allowable coverage of 1 percent.

Land between Highway 89 and the Truckee River remains as mapped: JHC (Jabro stony sandy loam, 2 to 9 percent slopes); Gr (Gravely alluvial land), with the lower lands within the Projected Standard Flood zone. JHC receives Land Capability class 5 with 25 percent allowable coverage; Gr and the Projected Standard Flood are Land Capability 1b with 1 percent allowable coverage.

- Area 4 - Tahoe City: All the area encircled by Fairway Drive and Grove Street, in addition to land between Highway 28 and the Lake.

Environmental Setting:

This area has andesitic materials adjacent to and upslope of old lake deposits. In some places the andesite has overrun the lake terraces. The old lake beds along the public beach area dip, creating a concave shaped landform northwest of the commercial lots. There, fine textured alluvium has accumulated under a marsh-like condition. Most of the golf course has been developed on the marsh land. Several perennial streams interfere the golf course. They have been piped underneath the commercial lots and Highway 89 to outlet in the Truckee River. The Highway 28 - 89 "Y" area was historically the confluence of several small perennial streams before they were captured by piping.

IRPA map sheet C7 shows most of this area to be within a delineation of Gr (Gravely alluvial land) and only a minor portion to be within JHC (Jabro stony sandy loam, moderately fine subsoil variant, 2 to 9 percent slopes). The geology map shows (Mathews, 1968) the area within delineations of Gl0 (Older lake beds) and Tv (andesite). Geomorphic analysis (Bailey, 1974) shows the area to be within delineations E2 (Outwash, till and lake deposits) and E3 (Alluvial lands).

Topographic high areas display vegetation consisting of Jeffrey pine, White fir, Incense cedar, wyethia and perennial grasses. Concave landforms and stream zones display willow, alder, aspen, sedge, juncus and perennial grasses.
Findings:

The area adjacent to Fairway Drive and Highway 89 was formed from andesitic materials over lacustrine sediments. This soil was described on Fairway Drive approximately 600 feet north of Highway 89. The soil displayed a brown medium acid gravelly loam surface over a variegated light yellowish brown and brown medium acid very gravelly clay loam, underlain by firm white lacustrine sediments. This soil was determined to be similar to the the Fugawe soil series. Elsewhere along Fairway Drive, on moderately sloping terrane, the soils were found to be similar to the Jabu series as presently mapped. Stream environment zones have incised the Jabu unit in several places.

Soils on concave landscapes within the golf course area exhibit very dark gray mildly alkaline clay or silty clay surfaces, under fill materials some places. Subsoils were light gray mildly alkaline clay, to greater than 4 feet depth. These soils were described from auger borings, one in the parking lot near the school ball field behind the Family Tree restaurant, and from other borings inside a roped off parking lot east of the Shell service station at Highway 89. Soils such as these have not been described in the Lake Tahoe Basin.

Soils on the tilted lake beds were found to be moderately well drained with a slightly acid dark brown sandy loam surface over a variegated strong brown and dark brown slightly acid gravelly clay loam subsoil, underlain by cemented lacustrine sediments. These soils are similar to the Jabu moderately fine subsoil variant. The Jabu soil was described on a gently sloping northwest facing surface, northeast of the Gallery. This terrace, adjacent to the Lake shore, terminates as an escarpment with slopes exceeding 30 percent, running from northeast to southwest, from the Firehouse to Grove Street. This terrace is dissected by a small stream zone (now piped) leaving an island of the higher ground between the "Y" and Mackinew Road.

Soils along the Lake frontage, at the public beach and below Mackinew Road are wet and/or subject to wave action and fluctuating lake water levels. Lake frontage soil units are complexes of Ba (Beaches) and Gr (Gravelly alluvium).

Road ditches, in places, along Fairway Drive and Grove Street conduct active water and support riparian vegetation.

Conclusions:

The small area of Fugawe soils is placed in soil unit FuD (Fugawe very stony sandy loam, 2 to 15 percent slopes). This unit is Land Capability class 5 with 25 percent allowable coverage. For unnamed soils in the golf course and topographic low position areas surrounding the Highway 89 "Y", a "Soil B" designation is proposed with Land Capability class 1b and allowable coverage of 1 percent.

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The tilted terrace along Highway 28, or core commercial area, is placed in JhC (Jabu stony sandy loam, moderately fine subsoil variant, 2 to 9 percent slopes). This unit receives Land Capability class 5 with 25 percent allowable coverage.

Areas along the lake shore are Gr (Gravelly alluvial sand) and Be (Beaches) with Land Capability class 1b and allowable 1 percent coverage.

- Area 5 - Tahoe City; From Grove Street to the eastern boundary

Environmental setting:

This area is heavily developed with commercial shops and paved parking areas. It comprises soils formed from lacustrine sediments and from endoskeletal materials (possibly colluvial). TRPA map sheet C-7 shows the soils to be mainly FuD (Fugawee very stony sandy loam, 2 to 15 percent slopes), JhC (Jabu stony sandy loam, moderately fine subsoil variant, 2 to 9 percent slopes) and Gr (Gravelly alluvium). The geology map (Matthews, 1968) shows this area to be in older lake beds. Geomorphic analysis (Bailey, 1974) shows this area to be in geomorphic unit E2 (Outwash, till and lake deposits).

An order 2 stream used to flow from where the service station presently sits at the corner of Jack Pine Street and Highway 28, down through the public library parking lot, and over to a path between the Boat Works and Safeway shopping areas. It has been rerouted and straightened to flow directly from above the service station, due south, to down between the Fantasy Inn and the Safeway parking lot where it rejoins the pre-existing drainage near the Boat Works. The paved shopping mall parking lot in front of the library, the Boat Works and the Round House diverts Highway 28 storm runoff water all the way to the lake.

Findings:

The area mapped FuD was inspected in several place along Pioneer Way and Tahoe Street and found to exhibit physical properties (soil texture, depth and drainage) similar to the Fugawee series. It was considered to be accurately defined on TRPA map sheet C-7 and was not changed.

The State Park and the area, northeast of Tahoe Street was found to be poorly drained, growing willow, elder and Juncus vegetative types, and consistent with the Gr unit as mapped.

A narrow strip along Highway 28, between the State Park and the east boundary, and a land remnant in the Safeway parking lot were found to have physical properties similar to those described on the dipping terrace near the Gellary, and left in JhC, as mapped.

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Four lots on the far east end of the project were noted as derived from volcanic sources on slopes between 15 and 30 percent. These soils were deep and well drained, similar to the Jorga series.

The area of land in the vicinity of the library, Round House and Boat Works has been extensively altered. Because of improvements consisting of paving and underground utilities, field investigations were primarily surficial; they were supplemented with aerial photography to determine the extent of change.

The lawn area near the Boat Works appears to have emerging springs, and much of the pavement in front of the Round House displays signs of alligator cracking or symptoms of subgrade failure due to saturated conditions. Drainage has only slightly improved in this area which used to be stream environment. At best it reflects a soil with hydrologic properties similar to Jabu sandy loam, seeped variant.

Conclusions:

With the exception of the rerouted drainage down through the Round House - Boat Works area, and soils on the four east end lots in the survey area, Land Capability districts remain unchanged.

The rerouted drainage is an order 2 stream and requires 50 feet setbacks to improvements on either side of the center of the flow line. The area which was originally the old stream zone has slightly improved drainage but still exhibits signs of seasonal wetness and is placed in JbD (Jabu coarse sandy loam, seeped, 2 to 5 percent slopes). This unit is Land Capability class 3 with 5 percent allowable coverage.

Soils on the four lots at the northeast end of the study area are JwE (Jorga - Tehama very stony sandy loam, 15 to 30 percent slopes) rather than Rx (Rock outcrop and rubble land). JwE is Land Capability class 4 with 20 percent allowable coverage.

Please refer to the attached map for proper capability district delineations.

Respectfully submitted,

Sidney Davis,
Certified Professional
Soil Scientist No. 1031

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Representative soil Profiles:

Lake Forest:
Profile No. 1

Location: Near intersection of Hillcrest Avenue and Aspen Street
Vegetation: Jeffrey pine, wyethia perennial grasses, bitterbrush
Soil Classification: Fine-Loamy, mixed frigid Ullic Haploxeralfs
Soil Series: Jabu moderately fine subsoil variant

0 1 to 0 inches, litter and duff.

A11 0 to 10 inches, grayish brown (10YR 5/2) gravelly sandy loam, dark brown (10YR 3/3) moist; moderate fine granular structure; soft, friable, slightly sticky and slightly plastic; many fine and medium, few coarse roots; many very fine and fine interstitial pores; medium acid; 15 percent gravel; clear smooth boundary.

A12 10 to 14 inches, grayish brown (10YR 5/2) gravelly sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, friable, slightly sticky and slightly plastic; many fine and medium common coarse roots; many very fine and fine interstitial pores; medium acid; 15 percent gravel; clear wavy boundary.

B1 14 to 23 inches, brown (7.5YR 5/4) gravelly loam, dark brown (7.5YR 3/4) moist, weak fine subangular blocky structure; slightly hard, friable, sticky and slightly plastic; many fine and medium few coarse roots; common very fine tubular and interstitial pores; medium acid; 15 percent gravels; gradual smooth boundary.

B21t 23 to 30 inches, light yellowish brown (10YR 6/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist, moderate medium angular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots; few very fine and fine tubular pores; few thin clay films on ped faces; medium acid; 15 percent gravel; gradual smooth boundary.

B22t 30 to 36 inches, light yellowish brown and brownish yellow (10YR 6/4, 6/6) gravelly clay loam, dark yellowish brown and yellowish brown (10YR 4/4, 5/6) moist; moderate medium angular blocky structure; hard, firm, sticky and plastic; few very fine and fine roots; few very fine and fine tubular pores; many moderately

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thick clay films on ped faces; medium acid; 25 percent gravel; gradual smooth boundary.

B23tx 36 to 55 inches, brownish yellow (10YR 6/6) gravelly clay loam, dark brown (10YR 3/4), moist; massive; hard, very firm, sticky and plastic; many moderately thick clay films coating mineral grains; medium acid; 35 percent gravel; gradual, smooth boundary.

B3tx 55 to 60 plus inches, light brownish gray (2.5Y 6/2) very gravelly clay loam, dark grayish brown (2.5Y 4/2) moist; massive; hard, very firm, sticky and plastic; many moderately thick clay films coating mineral grains; medium acid; 35 percent gravel.

Lake Forest: Profile No. 2
Location: Intersection of Hillcrest Avenue and Main Street
Vegetation: Willow, alder, perennial grasses
Soil Classification: Loamy, mixed, frigid Aquic Haploxeralfs
Soil Series: Unknown

C 0 to 14 inches, dark brown (10YR 4/3, 3/3) very gravelly mixed fill material

A1 14 to 20 inches, black (10YR 2/1) loam, moist, with many medium faint mottles of dark grayish brown (10YR 4/2); strong medium granular structure; hard friable, slightly sticky and slightly plastic; common very fine, fine and few medium roots; common very fine and fine interstitial pores; slightly acid; clear, smooth boundary.

A3 20 to 26 inches, very dark brown (10YR 2/2) with many medium distinct mottles of very dark brown (10YR 3/3) loam, moist; moderate fine subangular blocky structure; slightly hard; very friable; slightly sticky and slightly plastic; common very fine, fine, medium and few coarse roots; pores and reaction as above; gradual smooth boundary.

B21t 26 to 36 inches, dark brown (10YR 3/3) silty clay loam with many coarse prominent mottles of strong brown (7.5YR 5/6); strong medium subangular blocky structure; hard, friable, sticky and plastic; common very fine and fine roots; common very fine and fine tubular pores; many thin clay films on ped faces and

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In pores; slightly acid; gradual wavy boundary.

B2t1  36 to 40 inches, mottled dark brown, reddish yellow and strong brown (10YR 3/3, 7.5YR 6/6.4/6) silty clay loam; strong subangular blocky structure; hard, firm, sticky and plastic; common thin clay films on ped faces and in pores, slightly acid; manganese concretions.

Tahoe City Soil Profile No. 1

Location: Near south west corner of Comstock Village
Vegetation: Fir, Jeffrey pine, incense cedar, manzanita
Soil Classification: Coarse-loamy, mixed frigid, Ullic Haploxeralfs
Soil Series: Jabu

0  1 to 0 inches, twigs, conifer needles and duff.

A11  0 to 4 inches, brown (7.5YR 5/4) sandy loam, dark brown (7.5YR 3/4) moist; weak medium subangular blocky structure parting to weak fine granular; soft, friable, nonsticky and nonplastic; common fine and medium roots; common fine tubular pores; slightly acid; 10 percent gravel; clear smooth boundary.

A12  4 to 14 inches, brown (7.5YR 5/4) sandy loam, dark brown (7.5YR 3/4) moist; weak fine subangular blocky structure; soft, friable, nonsticky and nonplastic; common fine, medium and coarse roots; common fine interstitial pores; slightly acid; 10 percent gravel gradual smooth boundary.

B1  14 to 30 inches, yellowish brown (10YR 5/4) gravelly sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; hard, friable, nonsticky and nonplastic; common fine, medium and coarse roots; few fine tubular pores; few thin clay films in pores; medium acid; 15 percent gravels; gradual smooth boundary.

B2t1  30 to 48 inches, light yellowish brown (10YR 6/4) and yellowish brown (10YR 5/6) sandy loam (near loam) dark grayish brown (10YR 4/2) moist; moderate medium angular blocky structure; hard, friable, slightly sticky and plastic; few fine and medium roots; few very fine tubular pores; common thin clay films bridging sand grains; medium acid; gradual smooth boundary.

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B22tx 48 to 55 inches, yellowish brown (10YR 6/4) sandy loam, dark yellowish brown (10YR 4/4) moist; strong medium angular blocky structure; hard, friable, slightly sticky and very slightly plastic; few very fine tubular pores; common thin clay films in pores; clear smooth boundary.

11Cx 55 to 60 inches, light gray (10YR 7/2) sandy loam, very dark grayish brown (2.5Y 3/2) moist; weak fine platy structure; hard, friable, slightly sticky and nonplastic; few very fine tubular pores; slightly acid.

*Note: Peds in last two horizons have brittle feeling when crushed by hand.*

**Tahoe City Profile No. 2**

**Location:** South of Tavern Shores, 75 feet east of State Highway 89, about 1500 feet south of the Truckee River bridge.

**Vegetation:** Jeffrey pine, Lodgepole pine, service berry, sweet clover

**Classification:** Coarse-loamy (or loamy skeletal), mixed, frigid Eutric Xerumbrept

**Soil Series:** Not defined in Lake Tahoe Basin (Soil "A")

**A11** 0 to 8 inches, grayish brown (10YR 5/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; moderate very fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine, few medium roots; common very fine and fine interstitial pores; slightly acid; 25 percent gravel; gradual smooth boundary.

**A12** 8 to 14 inches, brown (10YR 5/3) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine to medium, few coarse roots; common very fine and fine interstitial pores; slightly acid; 30 percent gravel; clear smooth boundary.

**C1** 14 to 36 inches, pale brown (10YR 6/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; many very fine to medium, few coarse roots; few very fine and fine interstitial pores; slightly acid 35 percent gravel; gradual smooth boundary.

**C2** 36 to 40 inches plus, pale brown (10YR 6/3) very gravelly sandy loam, dark brown

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(10YR 3/3) moist; massive, slightly hard, friable, nonsticky and nonplastic; few fine and medium roots; few very fine and fine interstitial pores; slightly acid; 35 percent gravel.

Tahoe City Soil Profile No. 3

Location: Fairway Drive - approximately 500 feet north of intersection with Hwy 89
Vegetation: Jeffrey pine, wyethia, bitterbrush, perennial grasses
Soil Classification: Fine-loamy, mixed, frigid, Utlc Heploxeralfs
Soil Series: Fugawes

A1 0 to 7 inches, brown (10YR 5/3) gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate medium granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine to medium roots; common very fine to coarse tubular pores; medium acid; 15 percent gravel, 10 percent cobblestones; clear smooth boundary.

B1 7 to 20 inches, brown (10 YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, friable, sticky and slightly plastic; many very fine to medium roots; common very fine and fine tubular pores; medium acid; 15 percent gravels; 10 percent cobblestones; clear smooth boundary.

B21t 20 to 34 inches, yellowish brown (10YR 5/4) gravelly sandy clay loam (near loam), brown (10YR 4/3) moist; moderate medium angular blocky structure; hard, friable, sticky and plastic; many very fine and fine roots; moderate fine and medium, few coarse tubular pores; few thick and common thin clay films on ped faces; medium acid; 25 percent gravels; 5 percent cobblestones; gradual wavy boundary.

B22t 34 to 42 inches, variegated light yellowish brown (10YR 6/4) brownish yellow (10YR 6/6) and strong brown (7.5YR 5/8) gravelly clay loam, variegated yellowish brown (10YR 5/6) and strong brown (7.5YR 5/8) moist; massive; very hard, friable, sticky and plastic; few very fine roots; few very fine and fine tubular pores; few moderately thick clay films in pores; slightly acid; 35 percent gravels, 5 percent cobblestones; gradual wavy boundary.
IIICr 42 inches plus, firm white lacustrine sediments, can be dug with a spade.

Tahoe City Soil Profile No. 4

Location: Corner of ballfield, and golf course off Grove Street
Vegetation: None - lot used for vehicle traffic and parking
Soil Classification: Fine, montmorillonitic, nonacid, frigid, Fluventic Humaquepts
Soil Series: Not defined in the Lake Tahoe Basin (Soil "B")
Note: There is 18 inches of compacted fill over the original surface.

0 to 18 inches, fill consisting of sand body loam to sandy clay loam material, dark grayish brown in color.

A1 18 to 25 inches, very dark gray (N3/0) clay, black (10YR 2.5/1) moist; very coarse prismatic structure; hard, friable, sticky and plastic; non roots; mildly alkaline; gradual smooth boundary.

C1 25 to 34 inches, light gray (N 7/0) silty clay, black (N 2/0) and dark gray (N 4/0) moist; very coarse prismatic structure; very hard, firm, sticky and plastic; no roots; mildly alkaline; clear smooth boundary.

C2 34 inches plus, light yellowish brown (2.5Y 6/4) and light gray (N 7/0) clay, black (10YR 2/0) and grayish brown (2.5Y 5/2) moist; weak very coarse prismatic breaking to moderate medium angular blocky structure; very hard, firm, sticky and plastic; mildly alkaline.

Tahoe City Soil Profile No. 5

Location: 50 feet northwest of the Gallery - 15 feet from escarpment to Tahoe City beach
Vegetation: Jeffrey pine, wyethia, perennial grasses
Soil Classification: Fine-loamy, mixed frigid Ultic Haploxerals
Soil Series: Jabu moderately fine subsoil variant

A1 0 to 12 inches, dark brown (7.5YR 4/4) sandy loam, dark brown (7.5YR 3/2) moist; moderate medium granular structure; soft, friable, nonsticky and nonplastic; common fine and medium, few coarse roots; common very fine and fine interstitial pores; slightly acid; clear smooth boundary.

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B1  12 to 24 inches, dark brown (7.5YR 4/4) sandy loam (near loam), dark brown (7.5YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; common fine and medium and few coarse roots; common very fine and fine tubular and interstitial pores; slightly acid; gradual smooth boundary.

B21t  24 to 36 inches, dark brown (7.5YR 4/4) gravelly loam, dark brown (7.5YR 3/4) moist; weak medium subangular blocky structure; hard, friable, sticky and slightly plastic; common fine, medium, and few coarse roots; few very fine tubular pores; few thin clay films on ped faces; slightly acid; 20 percent gravel; gradual smooth boundary.

B22t  36 to 48 inches, variegated dark brown (7.5YR 4/4) and strong brown (7.5YR 5/8) gravelly clay loam, moist; moderate medium subangular blocky structure; very hard, friable, sticky and plastic; few fine roots; few very fine tubular pores; common thin clay films on ped faces and in pores; slightly acid; 15 percent gravels; clear smooth boundary.

I1C1  48 to 58 inches, olive brown (2.5Y 4/4) clay loam with yellowish red (5YR 4/6) iron mottles, moist; massive; hard, slightly firm, stickky and plastic; very few very fine tubular pores; slightly acid; abrupt smooth boundary.

I1C2  58 inches, cemented lacustrine sediments.

Tahoe City Soil Profile No. 6

Location: Payless lot near Shell station
Vegetation: Very sparse growth of weeds
Soil Classification: Fine, montmorillonitic, noneacid, frigid, Fluventic Humaquepts
Soil Series: Not defined in the Lake Tahoe Basin ("Soil B")

0 to 15 inches, very compacted gravelly engineered fill imported to site.

A1  15 to 32 inches, dark gray (10YR 4/1) silty caly, black (10YR 2.5/1) moist; strong very coarse prismatic structure; extremely hard, very firm, very sticky and very plastic; pressure faces; mildly alkaline; abrupt smooth boundary.
C1 32 to 46 inches, grayish brown (10YR 5/2) silty clay, very dark grayish brown (10YR 3/2) and black (10YR 2.5/1) moist; strong very coarse prismatic structure; extremely hard, very firm, very sticky and very plastic; pressure faces; mildly alkaline; abrupt smooth boundary.

Ab 46 to 55 inches, dark gray (10YR 4/1) and brown (10YR 5/3) silty clay, black (2/0) and very dark grayish brown (2.5Y 3/2) moist; structure, consistency as above; pressure faces; mildly alkaline; gradual smooth boundary.

Cg 55 to 60 inches, light gray (5Y 7/2) and pale olive (5Y 6/4) silty clay, olive gray (5Y 4/2) and olive (5Y 5/6) moist; weak medium prismatic structure; extremely hard, firm, very sticky and very plastic; mildly alkaline.

Tahoe City Soil Profile No. 7

Location: Quarry, near the west fence
Vegetation: None
Classification: Engineered fill materials (non-soil)
Soil Series: None

C1 0 to 7 inches, pale yellow (2.5Y 7/4) very gravelly sand to sandy loam, olive brown (2.5Y 4/4) moist; strong coarse platy structure; very hard, very firm, nonsticky and nonplastic; abrupt, smooth boundary.

C2 7 to 46 inches, very dark grayish brown (2.5Y 3/2) very gravelly sandy loam to sandy clay loam, moist; massive; very hard, very firm; slightly sticky and slightly plastic; 15 percent cobblestones and 25 percent gravel; abrupt, smooth boundary.

IIC 46 to 54 inches, light olive brown ((2.5Y 5/4) silt, moist; massive; slightly hard, friable, slightly sticky and slightly plastic; bedded lacustrine sediments.

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References:

1. Anderson Inc. 1964, 65. Aerial photography, black & white, Tahoe City area.


3. Cartwright Aerial Surveys Inc. 1962. Aerial photography, black & white, 1:20,000 scale, Tahoe City and Lake Forest area.


10. —— 1971. Map sheet C-7 (Tahoe City), scale 1" = 400'.


14. United States Department of Agriculture, Forest Service. 1963. Aerial photography, color contact prints, Tahoe City and Lake Forest area, scale 1" = 100'.

15. —— 1939. Aerial photography, black & white contact prints, Tahoe City and Lake Forest Area, scale 1: 20,000.

DAVIS Consulting Earth Scientists P.O. Box 724 Georgetown, CA 95634 (916) 333-1405
April 17, 1991

Mr. Gary Shellhorn
IPES Program Manager
Tahoe Regional Planning Agency
P.O. Box 1038
Zephyr Cove, NV 89448

RE: Tahoe City Land Capability Mapping.

Dear Gary:

Following our conversation yesterday, I will recount for you our methodology for arriving at the Land Capability districts in the Tahoe City Plan Area. I will also comment on "Soil B" that was delineated in the golf course area.

Before we went to the field, a variety of aerial photographs, in stereo pairs, were utilized for the purpose of three dimensional landform identification and separation of geomorphic surfaces. Photographic material utilized included U.S.F.S. 1939 (located in Nevada City, CA) to gain a sense of what the area looked like fifty years ago. In addition, we also had a set of aerials from Cartwright Aerial Surveys (Sacramento, CA) flown in 1962. We also researched files of Andregg, Inc., (Auburn, CA), a land survey company that did extensive subdivision work back in the late 1950's and early 1960's. They provided low elevation photography of Tahoe City for the years 1964 - 65. Dr. Skau (hydrologist, subcontractor on the job) provided U-2 color infrared photography, useful for delineating wet areas. TRPA provided us with a large color aerial blowup of Tahoe City, 1986.

After the major landforms were delineated, we set out to describe the soils found on them. We excavated no less than fifty small diameter holes, in addition to examining escarpments, bankcuts, roadcuts, construction site excavations, vegetation lines and other subtle variations in topography that might alter drainage patterns or soil types. After we had a sense of what constituted major soil units, based upon soil color, texture, structure, depth, drainage class and vegetation, we excavated or selected sites along road cuts that were considered representative for that particular unit. In all, we had seven sites we felt were representative of Land Capability districts in the Tahoe City Area. If one were to revisit those sites, and examine them, they would be able to see what we considered to be the "Typical" soil for a given map unit. Each map unit was traversed and closed, on the ground. There were many more than seven sites examined to delineate the Land Capability districts in the Tahoe City area.

With regard to Soil B, this unit was found to be a fairly extensive soil body (approximately 60 acres) that exists in the golf course area. It extends from Grove Street down to Highway 28/89. A similar soil exists in a meadow of about 20 acres size, on the West shore of the Lake, between Meadow and Ellis Roads, south of Homewood. Like Soil B in Tahoe City, this soil body did not receive recognition as a separate soil series in the published survey, but was lumped into the miscellaneous land type Gr (gravely alluvial land). Where complex areas of lake or channel deposits had become reworked by natural forces, miscellaneous land types were developed to describe them, because of high variability. There can be many unnamed soils in a miscellaneous land type. Gr has no formal description, and no soil series designation. Gr is typically associated with coarse textured materials in seasonally saturated areas, with minor inclusions of marshes, in and adjacent to, active stream channels.

When soils of small acreage extent were found in a soil survey area of Order 2 level, such
as the Lake Tahoe Basin Survey, they were considered too insignificant to stand as a single
mapping unit in a published report. At that time, 2,000 acres was the usual acreage requirement,
along with 10 modal descriptions, to set up a soil series. Because soils of small acreage amounts
received no mention in the final soil survey report does not mean they do not exist. Small areas of
unnamed soils were usually lumped into a similar unit, or a miscellaneous land type such as Gr, Lo
or Mh. Usually budget constraints were the reason for lumping small areas of unnamed soils into
larger units. Had the Soil Conservation Service been discharged to map at Order 1 level, then Soil
B might have been separated and had a soil series name set up for it.

Soil B formed in a basin-type landform (concave area) behind an uplifted and tilted,
Pleistocene terrace. The terrace, because it was tilted upward at the Lake front, caused drainage
water to impound behind it, in the area of the golf course. Soil B developed in very slow moving
drainage water under anaerobic conditions, causing organic matter and fine grained materials to
accumulate, turning the surface black, with dull gray color at depth. The drainage outlet from the
vicinity of Soil B is into the Truckee River, via a pipe system beneath the "Y" intersection of
Highways 28 and 89. Aerial photographs (Andregg, 1965) show two converging streams inside
the roadway island at the "Y", now covered by a sculpture and paved walkways.

It was recognized that a portion of Soil B had been filled, southwest of the Lucky Market.
To classify this soil, Soil Taxonomy was utilized. According to the rules of taxonomy, a soil must
have more than 50 cm (20 inches) of fill over it, before it can be recognized as a different soil. If
the fill is less than 50 cm, the soil beneath dominates the characteristics of the profile with regard
to land use performance. Only 15 inches of fill was found in two auger borings near the center of
the vacant lot. Soil B, found beneath the fill, dominated the profile and was mapped in this area.

Soil B was then evaluated by the Bailey Land Capability system (page 20). It was found to
be very poorly drained, a member of Hydrologic Group D and placed in Class 1b.

To qualify for "Man modified", a soil must be significantly altered as to change the
previous land capability designation, according to Chapter 20, TRPA code of ordinances. In the
case of the lot next to the Lucky Market, the Gr capability district as originally mapped placed the
lot in Class 1b. Now, as mapped, Soil B is Class 1b. This site, in our analysis, could not
technically qualify for man modified designation.

As defined by Section 404 of the Clean Water Act and the Federal four agency criteria,
Soil B is technically a "Hydric Soil" because it has an aquatic moisture regime, with evidence of
seasonal wetness above 20 inches (low chroma mottling or gleying). Where it has been filled and
no hydrophytic plants thrive, it may not qualify as a Jurisdictional Wetland.

As it exists today, Soil B receives Class 1b, under the Bailey Land Capability system and
TRPA code of ordinances.

Respectfully submitted,

Sidney Davis,
Certified Professional
Soil Scientist / Soil Classifier
No. 1031
On April 27, 1988, I reviewed the Taber CTA - Lake Fork Plain Areas Fire Risk mapping. My method of verifying this is to spot check various areas as mapped by Davis at a scale of 1 inch = 100 feet. I dug peat into this, and satisfied the criteria at areas no. 2, 3, 4 and 6. All of these were as he has reported. I also dug additional holes in his soil "A" and soil "B" at the same place as soil "A". I might have drawn a sort of slightly different but this in a judgement of the natural and forest areas under building & peat removal and some sort resemblance. I basically agree with the report concerning these areas. I pose or renew some in this, and I think I saw in some of the mapping reports and believe small differences could be found compared to the Taber CTA - Lake Fork Plain Areas.

Sincerely,

[Signature]

Area Soil Scientist

5/16/88
MEMORANDUM

June 3, 1991

To:       Advisory Planning Commission

From:    TRPA Staff

Subject: Amendments to the 208 Plan Stream Environment Zone Restoration Program

The following is a list of SEZ restoration projects already in Volume III, SEZ Protection and Restoration Program, of the Water Quality Management Plan, projects recommended for addition by the Advisory Planning Commission at the May meeting, and two additional projects not recommended last month. These two additional projects are brought back before you this month due to additional data available from the revised SEZ/land capability map overlay proposal for Tahoe City.

DG:rd
6/3/91
Proposed Additions to Volume III
TRPA 208 Plan

VIII. SEZ Restoration Project Description

A. Placer County, California

1. PA 001A, 002: Grove Street Tract
2. PA 002: Tahoe Lake School
3. PA 005: Burton Creek Meadow
4. PA 006: Sierra Pacific Yard
5. PA 024B: Snow Creek
6. PA 158S: Quail Creek
7. PA 158N: Homewood Canyon Creek
8. PA 159: Grand View Avenue
9. PA 166, 167: Ward Creek
10. PA 174: 64 Acre Tract
*11. PA 001A: Tahoe State Recreation Area
*12. PA 001A: Lower Truckee River Area
*13. PA 001A: Upper Truckee River Area
*14. PA 001A, 003: Fairway Drive Fill
**15. PA 001A: Wye Pond
**16. PA 001A: Tahoe City Golf Course

* Previously approved by the APC
** Additions for Tahoe City Community Plan
TAHOE REGIONAL PLANNING AGENCY
SEZ RESTORATION PROJECT DESCRIPTION

PROJECT NAME:  Wye Pond
PROJECT NUMBER:  PA 001A
TRPA MAP:  C-7
WATERSHED NAME (NUMBER):  Intervening Area Between Truckee River and Burton Creek (3)

PRIORITY CATEGORY:  Medium

PROJECT LOCATION:  The project site is located between the Truckee River and Burton Creek watersheds in Tahoe City, Placer County. The parcel is on the north side of State Highway 28, just west of the Wye. A gas station is located on the adjacent parcel to the west.

SITE DESCRIPTION/FIELD ANALYSIS:  The project site encompasses approximately three acres of fill placed in an SEZ. The lower part of the site has from 12 to 24 inches of compacted fill, covered with asphalt in some areas. Riparian vegetation is re-establishing in the area.

RESTORATION POTENTIAL:  The project site has been included in the area-wide drainage plan developed for Tahoe City. A pond and wetland are included in the conceptual plans. A wetland or marsh type restoration has the best potential because of the high ground water present in the area.

IMPLEMENTATION:  Placer County will implement the area-wide drainage project. The California Tahoe Conservancy, Caltrans, Burton-Santini, and Placer County will fund the project.

UPDATE:  This project description was added to the SEZ Protection and Restoration Program on __________, 1991.
TAHOE REGIONAL PLANNING AGENCY
SEZ RESTORATION PROJECT DESCRIPTION

PROJECT NAME: Tahoe City Golf Course
PROJECT NUMBER: PA 001A
TRPA MAP: C-7
WATERSHED NAME (NUMBER): Intervening Area Between Truckee River and Burton Creek (3)

PRIORITY CATEGORY: Medium

PROJECT LOCATION: The project site is located between the Truckee River and Burton Creek watersheds in Tahoe City, Placer County. The parcel lies between Fairway Drive and Grove Street, just northwest of the commercial area on State Highway 28.

SITE DESCRIPTION/FIELD ANALYSIS: The golf course includes approximately 5 acres of areas which could be restored. Ponds could be established and the channel which drains through the area could be improved with riparian vegetation. Also, the drainage in front of the Tahoe Lake School on Grove Street could be diverted to the golf course and returned to a more naturally functioning SEZ.

RESTORATION POTENTIAL: Since most of the golf course is mapped LB (SEZ), any restoration projects involving the use of riparian vegetation will have excellent potential.

IMPLEMENTATION: The golf course as a condition of future approvals or Placer County as part of the Community Plan improvements should implement this project.

UPDATE: This project description was added to the SEZ Protection and Restoration Program on ___________ 1991.