

WESTERN HILLS AREA PLAN

Adopted June 12, 1990

City of Belmont

DEPARTMENT OF COMMUNITY DEVELOPMENT Planning Division

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I. INTRODUCTION

A. AUTHORITY FOR AREA PLANS

California Government Code Section 65100 and 65301 authorizes cities to develop Area Plans for parts of their jurisdiction. The Area Plan serves as a means to develop specific policies in the General Plan addressing the unique problems and characteristics of an area within the City. Area Plans, when adopted, become part of the General Plan for the City and must be consistent with the overall goals, objectives, and policies, of the City's General Plan. All subsequently approved ordinances and zoning and subdivisions entitlements, as well as public work projects and individual development permits, within the geographic confines of the area plan must be consistent with the Area Plan as well as the broader General Plan.

B. THE PLANNING AREA

The Western Hills is identified by the General Plan as the single largest undeveloped land area in Belmont. The planning area is shown on Map 1 and comprises 297 acres, or eleven percent, of the total land area of Belmont. The Western Hills planning area also contains the largest assemblage of publicly owned open space land in Belmont consisting of 113 acres, not including the Water Dog Lake area.

The areas borders are generally defined by the Continentals and Carlmont residential areas to the north, the Village Drive residential area and Carlmont High School to the east, San Carlos City limits to the south, and the Hallmark residential area to the west. The planning area is separated by the Hastings Drive development into two subareas which will be referred to as "east of Hastings Drive" and "west of Hastings Drive".

C. THE PURPOSE OF THE WESTERN HILLS AREA PLAN

This Area Plan has been developed to address the unique conditions within the Western Hills. The privately owned and unsubdivided land has limited access and natural features which limit the location of future development. The most significant natural features include a creek, very steep slopes, and dense stands of trees in the area west of Hastings Drive. The area east of Hastings Drive is characterized by limited vegetation cover, some areas of more moderate slopes, and portions which have been disturbed by past grading activity. Both areas have potentially hazardous geologic and soils features which present major limitations to safe development. As a whole the area is a significant enclave of natural habitat for deer and other wildlife, the importance of which is increased due to the proximity to Water Dog Lake.

The purpose of the Western Hills Area Plan is to establish a concise City land use policy toward future development and open space preservation consistent with the physical and safety constraints of the planning area. The Goals, Objectives, and Policies of the Plan establish a direction on the issues of safety and environmental quality. The plan balances the feasibility and desirability of future infrastructure extensions and development densities with appropriate open space preservation.

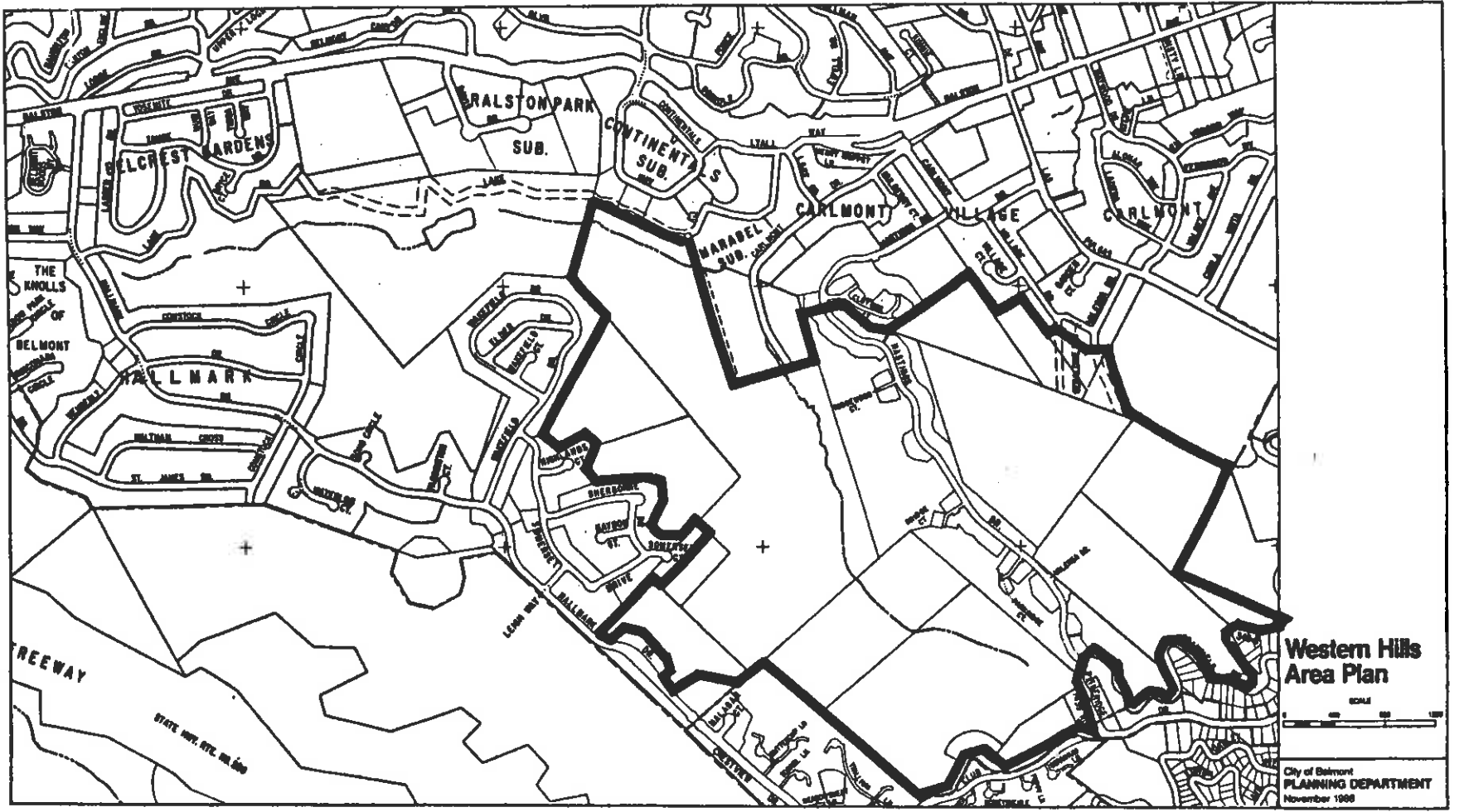
D. ORGANIZATION OF THE WESTERN HILLS AREA PLAN

Section I of this plan is entitled "INTRODUCTION" and defines the planning area, plan purpose, and plan organization.

Section II is entitled "PHYSICAL ATTRIBUTE INVENTORY" and includes data and analysis in six topic areas: Existing Land Use and Ownership; General Plan, Zoning, and Subdivision History; Geology; Biotics; Transportation and Circulation, and Infrastructure.

Section III is entitled "GOALS, OBJECTIVES, AND POLICIES" and contains the Plan development and environmental protection policies and standards.

The Appendix of the Plan contains background information and data used in formulating plan policies.



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MAP 1

PLANNING AREA BOUNDARIES

II. PHYSICAL ATTRIBUTE INVENTORY

A. EXISTING LAND USE AND OWNERSHIP

1. Description of Planning Area and Ownership

The planning area consists of 30 unsubdivided parcels totalling 297 acres. Private ownership accounts for 184 acres, or 62% of the planning area. The remaining 133 acres, or 38% of the planning area, is owned by the City and held as open space. Table #1 shows the Assessor Parcel Numbers, ownership, acreages, average slopes, and general locations of property within the planning area.

Currently 158 townhouses are developed in the planning area. The existing General Plan designation would permit development of 405 additional units for a total of 563 dwelling units. East of Hastings Drive could be developed to include 466 units; the 158 existing townhouses plus the potential for 308 additional units. West of Hastings Drive could be developed with 97 units of which three of these units could be along Club Drive.

2. Existing Land Use

Existing land use is shown on Map 2. The area is vacant except for the Hastings Drive development. Most of the undeveloped public and private parcels are in their natural state except for minor trails or footpaths which are used by area residents. Some hillsides have been subject to minor disturbance due to the installation of drainage improvements for the Hallmark development. Approximately 20 acres (6.7%) of the area has been disturbed by grading. The grading apparently occurred around the time of construction of the Hastings Drive and Hallmark developments. The majority of the disturbed areas are east of Hastings Drive and at the end of Carlmont Drive.

Much of the land west of Hastings Drive is very steep with limited areas under 30% slope. In the area west of Hastings Drive only about 15 acres of 98 acres in private ownership (or 15%) is under 30% slope, with most of the area being over 45% slope. The area east of Hastings Drive has more moderate slopes with 36 acres (about 42%) of the privately owned land being under 30% slope, and most of the balance being in the 30-45% slope category. Only a small portion of the area east of Hastings is over 45% slope.

TABLE #1

WESTERN HILLS PROPERTY LIST

OWNER	LOCATION	APN'S	ACRES	SLOPE*
A	EAST OF HASTINGS	45- 050- 040,070,090 45- 071- 010 45- 340- 030,040,070	86.1	42%
B	WEST OF HASTINGS	45- 340- 160 49- 011- 160	90.06	45%
BELMONT	MOSTLY WEST OF HASTINGS	45- 330- 180,230 45- 340- 170 45- 481- 430,440 45- 482- 250,260 45- 491- 180 45- 492- 330,340 45- 501- 060 45- 502- 190 45- 503- 100,110 45- 512- 130 49- 011- 150	113.5	45%
C	WEST OF HASTINGS	49- 011- 030 49- 033- 050	3.46	40%
D	WEST OF HASTINGS	49- 033- 060	0.05	45%
E	WEST OF HASTINGS	49- 011- 140	3.27	45%
F	WEST OF HASTINGS	49- 011- 020	1.0	45%

* Slope shown in this table is based on an average of steeper and more level areas.

B. PROPOSED LAND USE

The Western Hills Area Plan would reduce the development potential in the area from 563 units to a total of 229 dwelling units. East of Hastings Drive could be developed tot a total of 196 units; 158 existing townhouses plus 38 additional units under the Area Plan. West of Hastings Drive could be developed with 33 units.

C. GENERAL PLAN, ZONING, AND SUBDIVISION HISTORY

1. Public Ownership

All publicly owned lands in the planning area currently zoned and designated in the General Plan as Open Space except for one small lot at the southwest corner of Valerga and Hastings Drives. This small lot is designated residential low density in the general plan and is zoned Planned Development.

2. Hastings Drive Area

The Hastings Drive area is designated for low density residential development in the current General Plan and is zoned Planned Development with open space. The area was approved for development by Ordinance 532 which rezoned property to the open space and Planned Development Zones. Ordinance 532 and subsequent Council and Planning Commission approvals allowed the clustering of residential units along Hastings drive in the area zoned Planned Development, and required the steep adjoining lands to be placed in open space. The open space lands were then dedicated to the City of Belmont and have remained in public ownership. The Hastings Drive area is currently developed with 158 townhouses.

3. Private Ownership East of Hastings Drive

The undeveloped privately owned land East of Hastings Drive is designated for Low Density Residential development and is zoned Planned Development. Ordinance 531, and subsequent Council and Planning Commission actions, approved development of 308 townhouses in this area. Development potential was achieved by requiring the transfer of density out of the valley floor area West of Hastings Drive. The townhouse project was know as Friars Village. Although this project received approval of detailed development plans, a tentative subdivision map, and a grading plan it was never built. The grading plan and subdivision approval have expired and been superseded by new ordinance requirements. The currently existing approvals would be inconsistent with the proposed HRDP land use designation and could not proceed if the land use designations were changed to HRDP.

4. Private Ownership West of Hastings Drive

The area west of Hastings Drive is designated Open Space and Park on the General Plan and is unsubdivided. The area was part of the land involved in rezoning by Ordinance 531 which effectively transferred density out of this area and over to the area East of Hastings Drive. The project proponents were required to include sufficient land in their rezoning request so as to not exceed an average of 1.6 dwellings per acre. The conceptual plan approved with this rezoning showed no development in the area West of Hastings Drive. When the Planning Commission recommended approval of rezoning of this area it stipulated that the Developer shall dedicate a minimum of five acres of land, at the south terminus of Carlmont Drive, to the City of Belmont for the construction of a multi-purpose sports field (PC resolution 1972-28). The dedication was to be incorporated into the Planning Commission approval of the Friars Village (aka Belmont Village) detailed development plan. At the time of approval of the use permit/detailed development plan for Friars Village the developer was required by the Planning Commission to dedicate to the City the entire undeveloped, privately owned area west of Hastings Drive. Accordingly, the General Plan adopted in 1982 shows this area as park and open space, reflecting these approvals. The project was not pursued and the dedication was never done.

5. Club Drive Area

There are three legal lots along Club Drive which are designated low Density Residential in the General Plan and Zoned R-1E with a one acre minimum lot size. The remaining parcels are portions of an unimproved road sold by the City of Belmont to a private party.

D. LAND USE ALTERNATIVES

Various densities and housing types were presented to a committee composed of two City Council members and two Planning Commission members. The alternatives involved choices between appropriate minimum lot sizes, densities, and housing types. Single family densities considered were two dwellings per acre and four dwellings per acre. A townhome density of 12 dwellings per acre was also considered.

The committee considered the proposed densities in context with the densities set in the San Juan Area Plan directly to the Northwest. It was determined that due to the high slopes, soils instability, and visual quality of the remaining vegetation habitat that a density comparable to that stipulated in the San Juan Area Plan would be appropriate. As a result the Slope Density (HRO Zoning) standards were used as a guideline for formulating the proposed densities in

the Western Hills Area Plan. The Committee also found that townhouses would be an appropriate housing type provided the density was the same as that applied to for single family development under the plan.

Using this direction from the committee alternative patterns of home distribution were then developed. Primarily, large lot development and clustering were reviewed as possible choices. Due to the low density proposed for this area, large lot development was found to require the construction of long roadways and associated grading to access all possible large lots. Instead, the clustering concept at the proposed density would still allow for shorter roadways and less grading.

In the area west of Hastings Drive the constraints of steep slopes, riparian areas, and soils limitations lends itself to clustering on the valley floor. The clustering concept applied to this property will avoid grading of the hillsides for roadways necessary to accommodate large lot development.

In the area east of Hastings Drive the most accessible areas lie at the lower portion of the site near Geraldine and (lower) Valerga Drives. Clustering on this site would avoid the need for long roadways to traverse the hillsides and access large, unclustered lots. There is also the further benefit that roads will not have to be placed across unstable soils areas on steep slopes if homes are clustered toward the lower elevations of the site.

The Land Use Goals and Policies of this plan were based upon the above process and considerations. Accordingly, all further permitted subdivision would be required to be clustered development.

E. GEOLOGY

1. Geologic Hazards Study

A geologic hazard study was performed by Rogers/Pacific engineering consultants (February 1989) to provide technical background for the area plan. The geologic hazard evaluation procedures performed for the planning area involved identifying and characterizing its geologic structure and mapping these areas on an engineering geologic map. This was done by evaluating all available published and unpublished soils data and maps for the area, stereoscopic analysis of aerial photographs, and mapping of field conditions data gathered from on-site reconnaissance. These factors were then compiled and interpreted to develop an Engineering Geologic Map (Plate 1, Western Hills Geologic Hazards Study, March 3, 1989)

Further analysis was conducted based upon the engineering geologic map and existing ground slopes to develop a Ground Movement Potential Map (Plate 2, Western Hills Geologic Hazards Study, March 3, 1989). This map illustrates areas at differing levels of risk for slope failure. This map was used to create policies to address each level of identified risk. The resulting hazard categories were then used to develop criteria for development. The ground movement potential and geologic hazard policies are shown on Map 3. Hazard categories and development criteria are analogous to those used in the San Juan Hills Area Plan which will simplify coordination of development standards and implementing ordinances.

2. Geologic Hazards Data and Findings

The primary potential hazard to development in the Western Hills area are debris flow landslides. Debris flows are avalanche-like ground movements, initiating suddenly, and traveling at high speeds. They pose potentially deadly hazards to residents and potential risks of property damage to structures in their path. Debris flows can gradually accumulate over thousands of years until a heavy rainstorm triggers a catastrophic failure. As a result of recent debris flows in the Bay Area which have caused loss of property and death, geotechnical investigations have looked at the potential hazards of debris flows that may emanate from upslope areas, even if the debris flow source areas are outside the parcel proposed for development. This is an important concept for development review in the Western Hills area.

There are also soils deposits which have been identified as potential landslide, slumping, and soil creep hazards. The Western Hills area is generally more stable than the San Juan area. While many of the geologic processes in the two areas are similar there are some key differences. For example, the bedrock in the Western Hills is structurally more consistent than in the San Juan Hills so deep-seated, slow-moving bedrock landslides do not appear to be a major problem. The potential ground movement areas have been classified into areas of relatively stable and relatively unstable ground, consistent with those used in the San Juan Hills Area Plan.

The Geologic Hazards Policy Map (Map 3) depicts various ground areas and their relative stability and instability together with a summary of geologic conditions and how they affect land use. The hazard category abbreviations used to identify and depict the locations of potential hazards are described in more detail below:

Areas Of Relatively Stable Ground

- Sb1 Level bedrock ridges underlain by bedrock within a few feet of the ground surface. Soil cover may be subject to shallow sliding or settlement.
- Sbs Moderately steep slopes and minor ridges underlain by bedrock within several feet of the ground surface. Soil or alluvial cover may be subject to shallow sliding or soil creep especially on slopes which lie downhill from Hastings Drive and all slopes to the East of Hastings Drive.
- Sun Unconsolidated granular material on level ground which is subject to settlement. Liquefaction is possible in saturated areas during strong earthquakes.
- Sff Large areas of engineered fill placed upon flat ground and subject to localized settlement where placement might not have met engineering specifications.

Areas Of Potentially Unstable Ground

- Pfs Engineered fills placed upon moderately steep to steep ground which area subject to localized settlement, landsliding, and debris flows, when placement might not have met engineering specifications.
- Pdf Debris flow source, flow path, and depositional areas characterized by steep swales with a thick cover of soil, or steep\open slopes with loose soil susceptible to rapid movement, or potential flow paths for debris.
- Ps Relatively unstable and erodible thick colluvium on gentle to moderately steep slopes which are subject to shallow, rapid moving landsliding, slumping, and soil creep.
- Pd Potential unstable ancient landslides, all or a portion of which are subject to renewed movement.

3. Geologic Hazards Summary

The area west of Hastings Drive has east facing slopes below the Hallmark and Crestview developments which are characterized by planar slopes with an intact soil mantle, more dense vegetation, and few active debris flows. However, there are large areas of potential debris flows. The valley floor is fairly level and consists of fill, the engineering characteristics of which are unknown.

The hillside below Hastings Drive and the area east of Hastings Drive is characterized by a higher density of ravines, debris flows, potential debris flows and thick colluvial deposits. Portions of the area east of Hastings Drive contain low to moderate slopes with relatively stable soil and bedrock conditions.

The geologic evaluation conducted for the planning area identifies ridge tops and valley bottom areas as the most suitable for new roadways and residences. Specifically, the valley bottom in the area west of Hastings Drive is suitable for development provided improvements are sited to avoid the mouths of potential debris flow areas. Portions of the slopes east of Hastings Drive would be suitable for development from a soils stand point but would require mass grading aimed at creating stable, engineered slopes and building pads, similar to the approach used in the Hastings Drive area.

F. BIOTICS

Biotic resources consist of plant and animal life. An inventory of biotic resources was conducted by searching records of the California Natural Diversity Data Base, interpretation of aerial photographs, and on-site field survey. Literature on rare and endangered plants and special-status animals in the area was reviewed.

1. Vegetation

Western Hills vegetation consists of a combination of woodland, chaparral, scrub, and grassland. Woodland and scrub vegetation tend to occur on the north- and east-facing slopes. The vegetation types are shown on Map 4. Chaparral covers the largest portion of the planning area and is found in downslope areas west of Hastings Drive, and most areas to the east of Hastings Drive.

Woodland areas tend to occur on the lower slopes and ravines. The predominant tree species is the Coast Live oak. Other tree species include the California Buckeye, Bay, Elberberry, and Madrone.

Riparian vegetation is found in areas where intermittent streams occur. These are primarily in the southern portion of the valley floor to the west of Hastings Drive. The creek channel along the remaining valley floor in this area has been extensively modified and most riparian vegetation eliminated.

No special status (e.g. rare or endangered species) have been recorded in the study area or the immediate vicinity. Since historical occurrences of several plant taxa with special status have been recorded in the southern San Francisco peninsula area a follow up study was conducted during months when such plants might be

blooming and more easily identified. No special status species were found.

2. Wildlife

The undeveloped expanses of the Western Hills contributes to the wildlife habitat value of the area. Wildlife use of the area varies, with some species generally preferring a single vegetation type and others using several vegetation types to obtain necessary food, cover, and nesting or denning sites. The habitat value of the area is limited by the absence of a permanent source of drinking water and the proximity to existing development.

The woodland areas support a diversity of bird, mammal, amphibian, and reptile species. Nuts produced by oak, bay, and buckeye trees provide an abundant source of food for seed-eating birds. The chaparral and scrub vegetation areas provide important cover for wildlife such as fox and rabbit. Both areas support deer which tend to forage in developed areas at night.

No special status animal taxa were found. Due to the absence of suitable soils and host plant species, the likelihood of occurrence of most of these taxa within the study area is very low.

G. TRANSPORTATION AND CIRCULATION

1. Existing Road System

The only improved through road in the Western Hills is Hastings Drive. (See Map 2, Existing Land Use, for road locations.) Hastings Drive connects from Carlmont Drive near Alameda de las Pulgas along the ridge that divides the Western Hills area up to Witheridge Road. Hastings Drive is a 34' wide road improved with curbs, gutters, and sidewalks.

Carlmont Drive provides access to the valley floor of the area west of Hastings Drive. The paved section of Carlmont Drive stops at the edge of existing development. There are no paved roads providing access within the undeveloped area. Further south, parallel to Club Drive in San Carlos, is old Club Drive. Old Club Drive is an unimproved "paper" street; it is shown on the recorded subdivision maps for the area, but has not been built. Several privately owned lots front on this section of Old Club Drive.

On the east side of Hastings Drive, Vallerga Drive and Village Drive provide improved access to the edge of the unimproved area. Like Hastings and Carlmont Drives, these roads are fully improved with curbs, gutters, and sidewalks. There are no paved roads providing

access into the undeveloped area. On the east side of Witheridge Road is the unimproved section of Cranfield Avenue. This unimproved paper street is not located within the City of Belmont's boundaries. It is currently in an unincorporated area. There have been, however, some inquiries about annexing this road and the adjacent land into the City of Belmont.

2. Impact of Development on Intersections' Capacities

a. Current Condition

The 12 intersections around the study area were evaluated (see Table 2). Table 2 shows that all analyzed intersections within or near the study area are operating at good to acceptable level of service with the exception of Ralston Avenue/Alameda de las Pulgas, which is operating at level of service F. Away from the site, Ralston/El Camino Real is operating unacceptably at level of service E while Ralston/Sixth Street is operating at level of service D.

b. Impacts of Current General Plan and Zoning

The impacts of the level of development allowed by the current general plan and zoning in the Western Hills area (90 single-family units and 308 townhouse units) were analyzed. The current permitted level of development would generate a total of 2,720 daily two-way trips with 180 in-bound and 95 out-bound PM peak hour trips. The total currently permitted Western Hills build out would produce a one percent change in the V/C ratio at all major intersections along Ralston Avenue east of the Alameda, while closer to the site the change in V/C ratio would range from two percent to seven percent. There would be no change in level of service due to the Western Hills traffic, although conditions in intersections currently experiencing congestion and delay would be aggravated (see Table 2). Congestion and delay is especially problematic for the intersection of Ralston Avenue and El Camino Real.

TABLE 2

P.M. PEAK HOUR INTERSECTION OPERATION

Intersection	Existing		Existing + Project		Existing + Project + Cumulative	
	LOS	V/C	LOS	V/C	LOS	V/C
Ralston/El Camino	E	.98	E	.98	F	2.23
Ralston/Sixth	D	.82	D	.82	F	1.64
Ralston/South	A	.57	A	.57	D	.89
Ralston/Alameda	F	1.23	F	1.23	F	1.74
Ralston/Lyall	C	.71	C	.71	E	.92
Ralston/Cipriani	C	.71	C	.72	E	.95
Alameda/Carlmont	B	.64	B	.66	C	.75
Alameda/Valerga	A	.54	A	.55	B	.68
Carlmont/Hastings	A	.20	A	.21	A	.25
Carlmont/Merry Moppet	A	.35	A	.36	A	.37
Carlmont/Lake	A	.32	A	.33	A	.33
Lake/Lyall	A	.31	A	.33	A	.33

LOS = Level of Service; V/C = Volume to Capacity Ratio.

Source: Goodrich Traffic Group

c. Impact of this Document's Proposed Land Use Plan

Reductions in the proposed density from what is allowed by the current General Plan and zoning reduce the traffic impacts on roads and intersections in the areas near the Western Hills. For example, the proposed land use in this document of about 71 units would result in no change in PM peak hour level of service or the V/C ratio for any intersection along Ralston Avenue, except for a one percent increase at Cipriani. The V/C ratios along Alameda de las Pulgas, the Carlmont and Vallerga intersections would change by two percent and one percent. V/C ratios for intersections closer to the site would change from one to two percent by the project traffic, with operation remaining at a good level of service at all nearby locations. A signal is currently needed at the Alameda/Carlmont intersection because of the current traffic. Increased development makes it more desirable to install this signal to assure traffic safety.

In summary, the impacts of traffic on intersection capacity are not the major road issues. The more critical road issue is the feasibility and impact of building new roads into the vacant areas of the Western Hills to serve additional development.

3. Locations and Impacts of New Roads with the Western Hills

a. West of Hastings Drive

Potential locations for new roads within the Western Hills Area were evaluated. An extension of Carlmont Drive along the valley floor in the area that has already been disturbed by grading appears to be feasible. Stabilization of the fill would be required. A cul-de-sac would also be needed at the end to assure that there is adequate maneuverability for safety vehicles. Roads extending up the slopes to serve the surrounding undeveloped private land would require large amount of grading and would, therefore, not be desirable. Roads coming off Hastings Drive to serve this area would also be undesirable since they would require significant grading because of the slopes coming down from Hastings Drive and would have to pass through undeveloped publicly owned land.

Further south, on the west side of the study area, is Old Club Drive, an unimproved paper street. The only potential access for several privately owned parcels located adjacent to Old Club Drive would be over this general alignment. Old Club Drive is located in an area with steep slopes and geologically unstable conditions. The current location and width of the graded bench of Old Club Drive appears to be feasible for a one-way private road. There are a number of questions that would need to be

resolved: 1) the kinds of structural support for the road that would be needed; 2) whether the geologic hazards can be adequately mitigated; 3) the geometrics of the road design; and 4) how access to all of the existing parcels can be provided. A road improvement plan for the entire roadway needs to be developed addressing these questions before any residences are built using Old Club Drive.

b. East of Hastings Drive

Access to the area on the east side of Hastings Drive from Hastings Drive is undesirable because of slope and geologic conflicts in the area. One of the possibilities studied was extending Vallergera Drive down from Hastings Drive which was undesirable because it would require a great deal of grading to fill in the canyon. Similarly, coming off Cliffside Court to access the undeveloped area east of Hastings Drive is undesirable because of the steep slopes in that area and the amount of grading that would be required to provide access.

A more feasible way to provide access to the vacant land east of Hastings Drive is by extending the lower Vallergera Drive and Geraldine Way. The amount of grading required to enter from the east from lower Vallergera and/or Geraldine Drives is much less than entering from the west via upper Vallergera Drive. There are some geologic conflicts with extension of Geraldine Drive because it would pass through a potential debris flow area. Mitigation of geologic hazards would have to be resolved before any extension of Geraldine Drive could take place.

c. Cranfield Avenue

A road improvement plan for Cranfield Avenue needs to be developed before the City would consider annexation. The plan would need to address both the plans for improving the road, the number of building sites, and the design of the lots that would be proposed along that roadway.

H. INFRASTRUCTURE

1. Drainage

The Western Hills area encompasses two drainage areas. The first is the canyon at the terminus of Carlmont Drive and the adjacent hillsides which are west of Hastings Drive. The second is the series of slopes east of Hastings Drive. These areas drain respectively to drainage improvements in the developed areas along Carlmont Drive and Alameda de las Pulgas.

A storm drain study was commissioned by the City. The 1985 study was conducted to assess the feasibility of constructing a storm water retention basin at the end of Carlmont Drive to reduce flows. The City, instead, determined that it would be more desirable to increase the downstream storm drain capacity. The improvements discussed in the following paragraphs have recently been completed and address the downstream storm drain capacity.

A 54-inch storm drain runs down Carlmont Drive, connects to 60-inch and 84-inch storm drains, and eventually outfalls into Belmont Creek just east of Alameda de las Pulgas. An additional 48-inch line runs along Carlmont Drive and connects to the 84-inch line, to pick up drainage from the northern tributary of Belmont Creek.

There are numerous drainage structures in and on the margins of the canyon. The Carlmont storm drain system actually begins within the canyon at the upstream end of the existing valley-bottom fill. A 72-inch corrugated metal pipe riser, with debris racks, collects flows at the point of confluence of the two largest tributary drainages in the canyon. Drainage from the western tributary is, in part, carried by a concrete V-ditch. The ditch is part of a larger system of concrete ditches that carry drainage down into the canyon from developed areas along Hallmark Drive to the west. Some of these ditches are in poor repair, with cracks in places and subsurface flows undermining some sections. The City clears these ditches once annually. Drainage from the residential area along and adjacent to Sherbourne and Somerset Drives is collected in limited storm drain systems which outfall to the natural slopes in several locations.

Along the east side of the canyon, drainage from Hastings Drive also outfalls to the natural slopes in several locations. In some locations, drainage is controlled to the base of the slope by a pipe or concrete V-ditch. Gullying was observed in one location where drainage is not controlled to the base of the slope.

Grated inlets to the Carlmont storm drain system are located at the bases of swales on the east side of the canyon. Inlets are located at the margins of the valley-bottom fill and appear to be designed to catch debris while collecting storm flows. Swales behind the apartment buildings on the west side of the upper part of Carlmont Drive flow into 24-inch concrete pipes that connect to the Carlmont storm drain system. These inlets have concrete headwalls, debris grates, and, in one location, a trash rack immediately upstream. All the inlets appear to be in good repair and regularly maintained.

Drainage from the slope east of Hastings Drive is collected at the base of the hill in three locations. Adjacent to the southwest corner of Carlmont High School, drainage flows from a natural swale into a grated inlet to 21-inch and 33-inch parallel concrete pipes.

Accumulation of silt was observed at this location, but the inlet appears to be in generally good repair. A 15-inch to 18-inch storm drain was recently added to Valerga Drive, which has previously had problems with excessive surface flows on the street. This storm drain is sized to handle existing flows only, and not to provide for any future development of this area. Similarly, an 18-inch pipe was recently installed at the upper end of Village Drive. All three of these systems connect eventually to a 48-inch storm drain along Alameda de las Pulgas, which outfalls to a tributary creek of Belmont Creek just south of the intersection with Carlmont Drive. The creek runs behind the shopping center located at the intersection of Alameda de las Pulgas with Ralston Avenue, where it appears that it may have some localized flooding problems.

Development under the proposed Area Plan would increase downstream storm runoff in two ways. First, it would add approximately five acres of impervious surface to the planning area (assuming approximately 3,000 square feet of impervious surface per residence), which would reduce infiltration of rainfall into the soil. Secondly, new storm drains associated with the development would convey peak flows more rapidly to the bases of slopes, where they would further increase existing peak flows in downstream drainage facilities.

The storm drain improvements that have recently been completed were designed to have capacities based on present undeveloped conditions in the planning area. Thus, any new development could adversely affect the capacity of downstream drainage improvements. Furthermore, because there already is an unmitigable capacity problem in the downtown area, any upstream development would incrementally add to this existing problem. However, because of the low density of development proposed to be permitted under the Area Plan, the adverse hydrologic impacts would be relatively small. For example, addition of three acres of impervious surface to the 190-acre Carlmont Canyon watershed would increase peak flows by approximately four percent; this would increase the estimated 25-year peak from 200 cfs to 208 cfs.

Uncontrolled storm runoff flowing onto unprotected slopes could cause erosion and landsliding. In particular, concentrated flows from pipes or drainage ditches could cause significant erosion. If surface drainage and storm drainage systems are not adequately designed and constructed, downstream areas could be adversely affected by sedimentation.

Historically, there have been many problems of localized flooding in Belmont. The most significant of these have been addressed by the recent storm drain improvements initiated by the City over the past four years. The recent improvements have not been sized to accommodate the development of major vacant areas east and west of

Hastings Drive. Development of these areas will require further drainage improvements.

2. Water Supply and Distribution

Residential development under this plan would result in an increased water demand of approximately 29,000 gallons per day. There is adequate water supply to meet this demand but distribution improvements may be necessary. Adequate pressure would be available in the large unsubdivided areas east and west of Hastings Drive because of the relatively low elevations which are suitable for new residences. There is a low water pressure problem at the upper portion of Hastings Drive which is not proposed for correction under this plan since this area is already developed. Any correction such as a new water tank would have to be done as a Water District Project since it would have little or no relationship to serving new development.

Development of the property west of Hastings Drive may require a right-of-way through private or publicly owned property to "loop" a water main down from Hastings Drive to the extension of Carlmont Drive. The improvement would help provide uninterrupted domestic and fire fighting water service in the event of a disruption along the water main.

Development of the property east of Hastings Drive would not pose a water pressure problem. Development would lend itself to the installation of a "loop" water main due to the Plan policies requiring that homes be located on the lower elevations near the termini of Geraldine and (lower) Valerga Drives.

The three potential home sites on Club Drive may require the construction of a small hydro-pneumatic water pressure system to be served by Belmont County Water District. As an alternative, water service might be obtained from the California Water Company in San Carlos from mains on Club Drive. This action may require deannexation from the Belmont County Water District.

3. Sewage Collection and Treatment









The South Bayside System Authority provides sewage treatment services to the planning area. The existing collection system operates by gravity flow. Trunk lines already exist in the area adequate to serve buildout, but collection lines connecting development to trunk lines would need to be installed.

Development of the Western Hills Planning area alone would utilize four to seven percent of Belmont's remaining treatment capacity, and

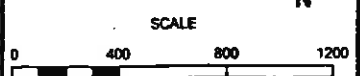
would not represent a significant use of the remaining capacity. However, cumulative development in Belmont could exceed the remaining sewage treatment capacity depending on future total development intensity and water usage patterns. If necessary, the City has the right to purchase additional sewage treatment services to handle all future buildout contemplated under existing general plan policies, the proposed downtown specific plan and this area plan.



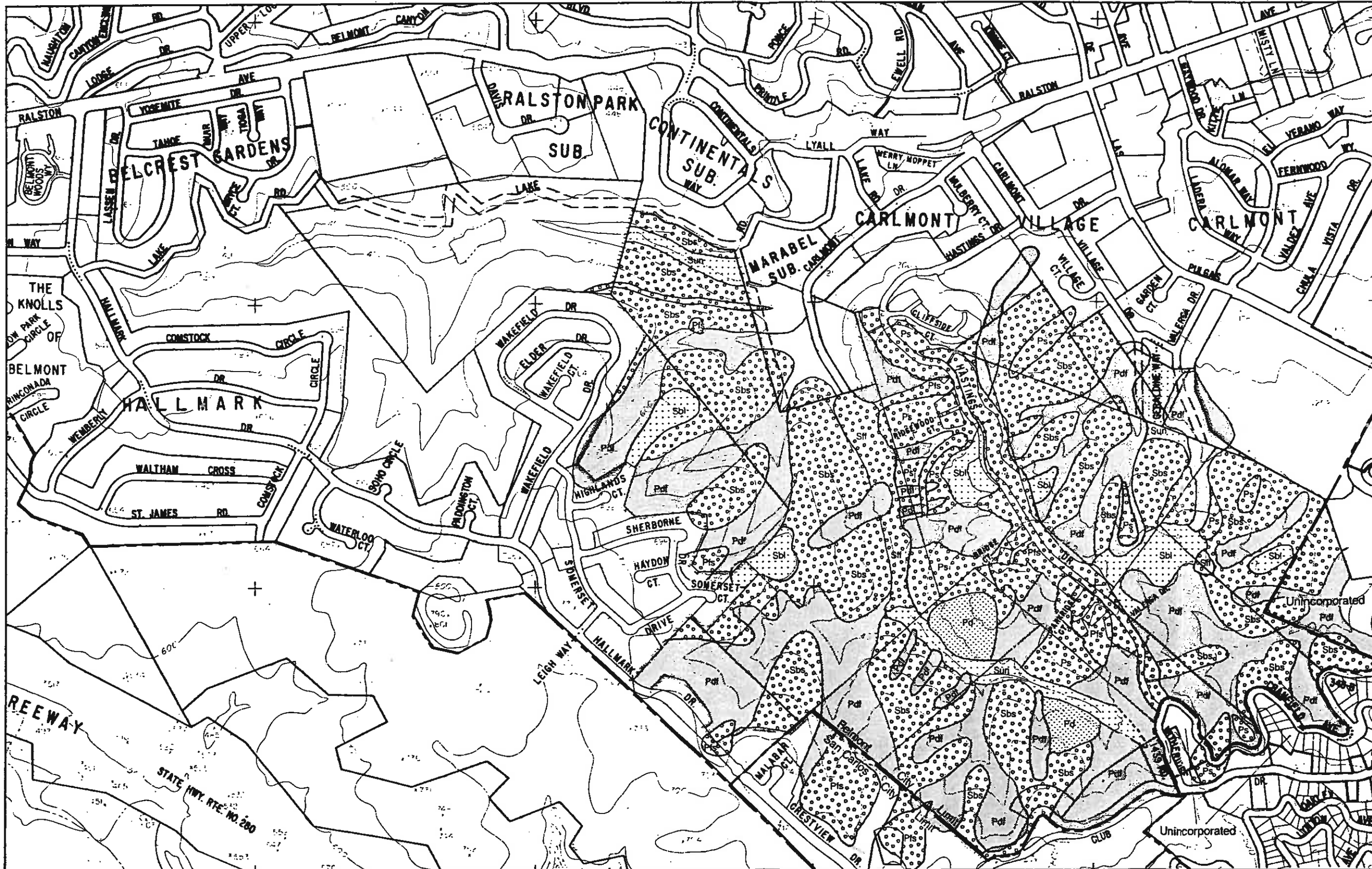
MAP 2
Existing
Land Use

-  Undeveloped-Public
-  Undeveloped-Private
-  Disturbed By Grading
-  Single Family
-  Townhomes
-  Multi-family Residential
-  Tot-lot
-  Unimproved Road





Western Hills
Area Plan



Study Area Boundary
 City of Belmont
PLANNING DEPARTMENT
 November 1988



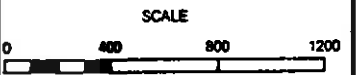
MAP 3
Ground Movement Potential and Geologic Hazard Policy Map

-  DEVELOPMENT AND ROAD EXPANSION PERMITTED
-  DEVELOPMENT AND ROAD EXPANSION CONDITIONALLY PERMITTED
-  DEVELOPMENT AND ROAD EXPANSION NORMALLY NOT PERMITTED UNLESS HAZARDS ARE MITIGATED
-  RESIDENTIAL DEVELOPMENT NOT PERMITTED UNLESS CONDITION IS DEMONSTRATED NOT TO EXIST OR ELIMINATED. ROAD EXPANSION NORMALLY NOT PERMITTED UNLESS HAZARDS ARE MITIGATED

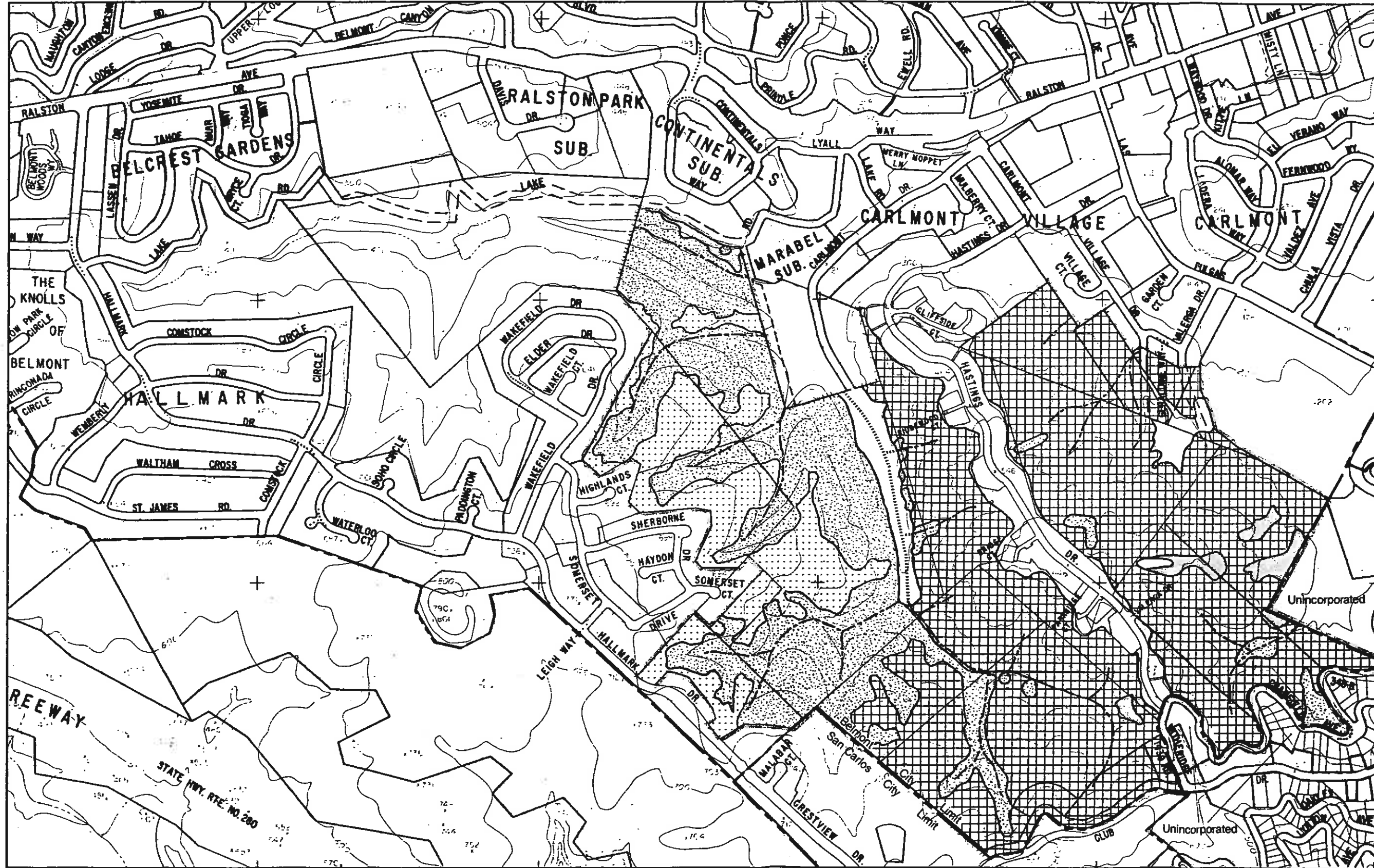
NOTE: For a full explanation of geological designations see text

Source for Geological Information:
 Rogers/Pacific
 Professional Engineering Consultants.
 November 1988









Western Hills Area Plan



Study Area Boundary
 City of Belmont
PLANNING DEPARTMENT
 November 1988



MAP 4
Vegetation

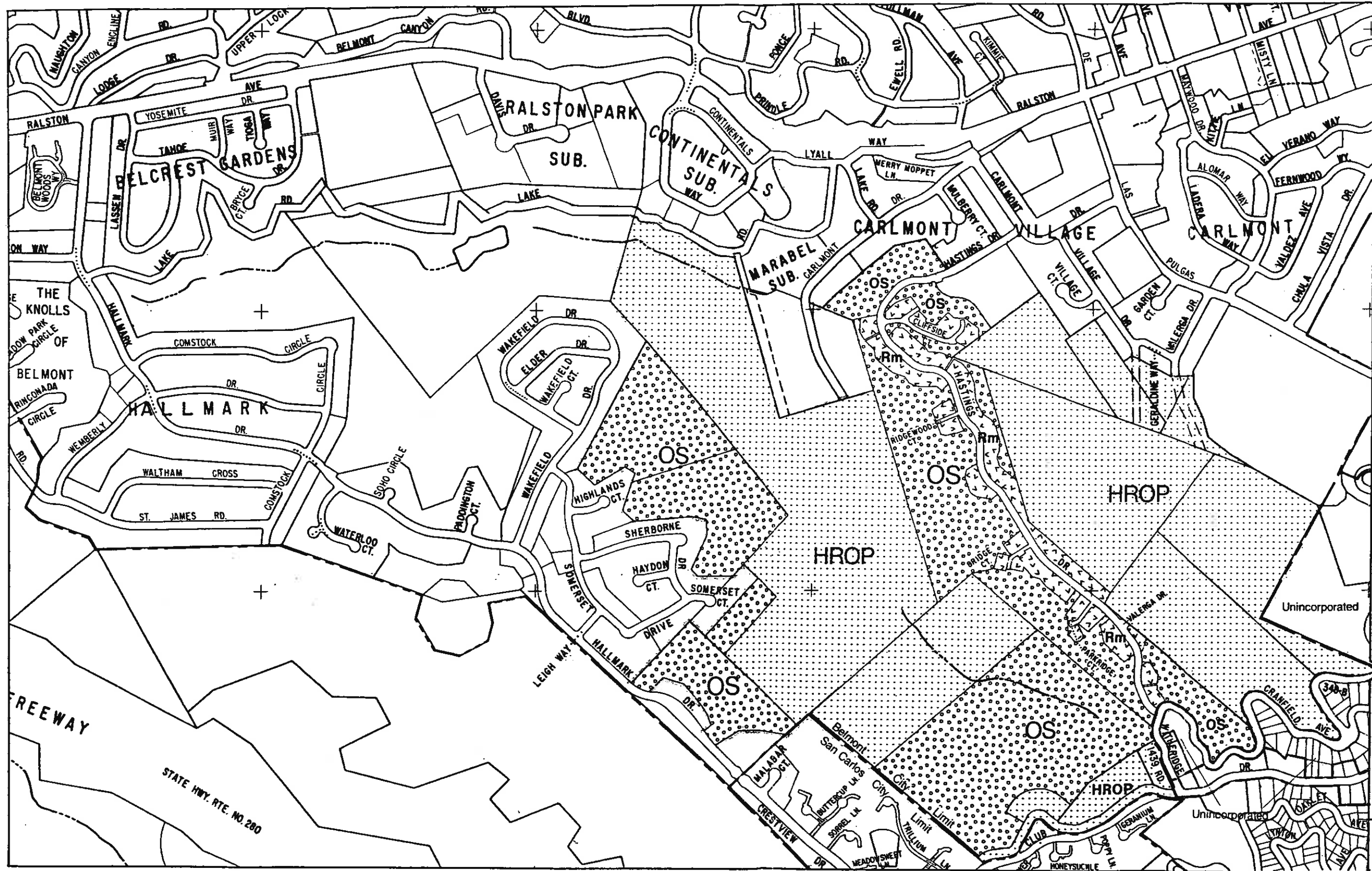
-  Grassland
-  Woodland
-  Chaparral
-  Scrub
-  Ornamental/Barren
- Intermittent Stream: 
- Open Channel: 
- Culvert: 

Western Hills Area Plan




SCALE
0 400 800 1200

Study Area Boundary

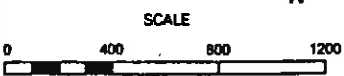
City of Belmont
PLANNING DEPARTMENT
November 1988



MAP 5
Land Use
Policy Map

-  OS Open Space
-  HROP Hillside Residential and Open Space
-  Rm Residential-Medium Density

Western Hills
Area Plan



Study Area Boundary
 City of Belmont
PLANNING DEPARTMENT
 November 1988

III. GOALS, OBJECTIVES, AND POLICIES

GOALS AND OBJECTIVES

GEOLOGY

1. Provide Geologic Stability

Ensure a high level of geologic stability for building sites, structures and infrastructure.

2. Require Information on Geologic Hazards

Improve the City of Belmont decision making process pertaining to geologic hazards in the Western Hills area.

3. Minimize Public Liability and Private Injury

Minimize public liability and private injury for hazardous lands.

BIOTICS

4. Preserve Natural Resources

Preserve hillside and riparian vegetation, Oak woodland, natural habitat, and other natural resources in the Western Hills Area.

LAND USE

5. Relate Land Use Intensity to Slope Characteristics

Ensure that the density (units per acre) and intensity (size of each unit) of residential use is related to the slope characteristics of parcels in the Western Hills in order to assure safe development and minimize risk of injury and property damage.

6. Require Clustered Development

Cluster development wherever possible on the most developable portion of an area, leaving the maximum portion of the site in its natural state.

7. Encourage Open Space Protection

Encourage the preservation of open space in areas of scenic, natural resource, and recreational value, as well as areas that are geologically hazardous or steeply sloped. Assist private landowners in finding ways for them to manage and permanently preserve private open space.

8. Discourage Acquisition of Land In Areas Designated Pdf

Discourage the acquisition by the City of Belmont of land with critical geologic hazards which would create liability problems for the City. Land with critical geologic hazards is categorized as Pdf (potential debris flow) on Map 3.

9. Encourage a Public Greenbelt and Trail System

Pursue creation of a continuous greenbelt of publicly owned open space that will be appropriate for passive recreational uses as well as for walking trails.

COMMUNITY DESIGN

10. Reflect the Natural Constraints of the Area in Land Use Planning

Achieve a land use pattern, density and distribution of development that is consistent with the existing slopes and geologic hazards in the currently undeveloped parts of the Western Area.

11. Promote Design of Structures in Order to Protect the Resources of the Area

Ensure that new structures are designed to protect the visual and natural resource quality of the hillsides.

12. Preserve Public Views

Preserve public views into, within and from the western area, particularly public views of natural areas.

13. Minimize Grading Disturbance

Design grading to disturb existing topography as little as possible and retain a natural appearance.

TRANSPORTATION AND CIRCULATION

14. Require Adequate Road Improvements

Insure that adequate road improvements are available, or approved and assured, before permitting development to proceed.

15. Promote Environmentally Sensitive Road Improvements

Design and locate extensions of roads to protect natural resources and existing neighborhoods.

INFRASTRUCTURE

16. Require Adequate Site and Area Drainage

Minimize runoff from new development, protect slopes from erosion, and assure adequate storm drainage facilities will be provided with, and paid for by, new development.

17. Require Adequate Water and Sewer Service for New Development

Approve development only when adequate water and sewer service capacity is available to serve the needs of the proposed development.

POLICIES

GEOLOGIC HAZARDS

1. Adoption of Geologic Maps

- a. Use the Engineering Geologic Map and Ground Movement Potential Map prepared by Rogers/Pacific Professional Engineering Consultants dated November, 1988 as the official geologic maps of the City. These maps will be used for the purpose of determining the relative geologic stability of land when reviewing development applications, roadway extensions, and public works improvements in the Western Hills Study Area.
- b. Update and improve the official geologic maps based upon new and detailed engineering geology and soils reports and the recommendations of the City Geologist. Establish procedures for updating these maps.

2. Required Geotechnical Investigations

Require the following geotechnical reports to accompany applications for development and roadway extensions.

3. Geologic Hazards and Land Use Policy

- a. Adhere to the land use policies in Table 3 Geologic Hazard Criteria for Development. When land uses not listed in Table 3 are under review, the City will use this table as a general guide for evaluating that proposal.
- b. Applications for alterations, repairs or additions to existing structures on currently paved roads may be considered acceptable deviations from this table, if they would not adversely affect the existing stability of the site and structure.

4. Mitigate Geologic Hazards

Require mitigation of geologic hazards prior to development of residences, roadways, and other structures in areas designated Sbs, Sff, Pfs, Ps, and Pd on Map 3. Such areas are categorized as Y* or N* in Table 3.

TABLE 3
GEOLOGICAL CRITERIA FOR DEVELOPMENT

SYMBOL	LAND USE	
	Residential Uses	Roads
Sbl Bedrock with thin soil, level ground	Y	Y
Sbs Bedrock with thin soil, slopes	Y*	Y*
Sun Unconsolidated sediment	Y	Y
Sff Fill on nearly flat ground	Y*	Y*
Pfs Potential settlement or failure of fill on a slope	Y*	Y*
Ps Thick colluvium, potential shallow (<10') landslide failure	Y*	Y*
Pd Potential deep (>10') landslide failure	N*	N*
Pdf Potential debris flow movement	N	N*

Y	Yes (permitted)
Y*	The land use would be permitted, provided geologic data indicates geologic conditions and/or engineering solutions are favorable.
N*	The land use would not be permitted unless geologic data indicates geologic conditions are more favorable than mapped or engineering solutions will reduce the risk to acceptable levels.
N	No, the use is not permitted. The map must be changed to show that this hazard does not exist before development will be allowed. The map change must be based on geologic data showing that the map was in error or that improvements have been undertaken that remove the hazard.

5. Restrict Development in Potential Debris Flow Areas

Restrict development where geologic hazards pose a critical hazard by prohibiting the building of new residences in areas categorized as Potential Debris Flow (Pdf) on Map 3. Require the removal of this hazard prior to residential construction, consistent with Table 3.

BIOTICS

6. Protect Vegetation

Ensure that development meets the following criteria:

- a. minimize the removal of vegetation;
- b. protect and restore vegetation which stabilizes soils and reduces surface water runoff, erosion and sedimentation;
- c. protect historic and scenic trees;
- d. provide revegetation of all significant tree cover;
- e. promote the use of native trees and plants in new landscaping; and
- f. avoid the removal of riparian vegetation.

7. Protect Streams and Creeks

Protect streams and creeks by:

- a. requiring that development, including roads, is set back from riparian corridors; and
- b. preventing road alignments that cross creekbeds.

8. Protect Wildlife Habitat

Protect wildlife habitat by siting and designing new development to maintain portions of existing habitats in undeveloped areas.

LAND USE

9. Land Use Designation

Designate land use in the General Plan as shown on Map 5, Land Use Policy Map, based on the following criteria:

- a. Designate as Medium Density Residential (Rm) those lots which are adjacent to Hastings Drive. Sale and development of the vacant city-owned lot at Valerga and Hastings within this residential area is considered infill to an existing developed neighborhood.
- b. Designate as Hillside Residential and Open Space (HROP) large unsubdivided parcels and land at the termini of existing roadways which is suitable for very low density clustered residential development use because of steep slopes, unstable soils, scenic and natural resource value, limited roadway access.
- c. Designate as Open Space those tracts of City owned land which are unsuitable for residential development and should be permanently kept as open space to preserve the natural beauty of the area and to meet the recreational needs of the citizens of Belmont.

MEDIUM DENSITY RESIDENTIAL AREAS

10. Uses

Allow attached and detached single family residences and uses normally accessory to residences as permitted uses. Provide for other related uses subject to conditional use permit review for compatibility.

11. Control House Size in Medium Density Residential Areas

Protect the character of residential neighborhoods by insuring that house sizes are visually compatible with the size and slope of the lot on which they are located and the size of the majority of existing homes around them.

12. Prohibit New Subdivisions in Medium Density Residential Areas

Prohibit subdivisions that would create additional lots in the areas designated medium density residential in the Western Hills Area Plan.

HILLSIDE RESIDENTIAL AND OPEN SPACE AREA (HROP)

13. Uses

Allow attached and detached single family residences and uses normally accessory to residences as permitted uses. Provide for other related uses subject to conditional use permit review for compatibility.

14. Density in Hillside Residential and Open Space Areas

- a. Density of development (number of dwelling units) permitted shall be based on the slope of the land. The density permitted should generally range between 0.3 and 4.4 dwelling units per net acre based on the average slope of the parcel. Higher densities are permitted to promote clustering and recombination of lots.
- b. The density of development should be most restrictive in areas with greater than 30% average slope, moderately restrictive in areas with 15-30% average slope and least restrictive in areas with average slopes of 15% or less.
- c. Develop slope density regulations to implement this policy.
- d. Prohibit subdivision of land which results in creation of large lots for homesites.
- e. Permit subdivision of land which meets the following criteria:
 1. Home sites will be clustered in areas designated Y or Y* or repaired properly to qualify as Y or Y*, as designated on the Geologic Hazards Policy Map (Map 3) and as defined by the Geological Criteria for Development (Table 3).
 2. Cluster lots will be no larger than 10,000 sq. ft.
 3. Homes will be sited in locations which minimize the extension of new roads and minimize driveway length. Roads which cross areas designated N* in Table #2 shall not be permitted unless found to be essential for reasonable development of the site and the hazard posed by these areas is found to be reduced to acceptable levels.
 4. Protect areas of slope exceeding 45% from development.

Areas which meet this criteria are generally shown on the Land Use Suitability Map (Map 6) in the Appendix.

15. Permitted Land Uses in Hillside Residential and Open Space Areas

- a. Permit single family detached dwelling units. Permit clustered development of detached single family homes to preserve open space.
- b. Permit uses which are normally accessory to residential uses and, under appropriate controls, institutions and public facilities such as churches and schools.
- c. Permit public and private recreational uses.

- d. Permit up to 30% of the allowed density within cluster development East of Hastings Drive to be constructed as townhouses. Require 100% of permitted residential density within cluster development West of Hastings Drive to be constructed as townhouses.

16. Location of Development in Hillside Residential and Open Space Areas

- a. In the area west of Hastings Drive limit development location to the floor of the valley between the current terminus of Carlmont Drive and the beginning of the natural creek channel to the south. This location is generally within the area already disturbed by grading.
- b. Limit the location of development in the area east of Hastings Drive to areas less than 15 percent slope, and to areas no closer than 500 feet to existing development along Hastings Drive on slopes greater than 15 percent.

Areas that meet this criteria

Areas which meet this criteria and other HROP plan criteria and policies for geologic hazards, biotics, open space, community design, transportation and circulation, and infrastructure are generally shown on the Land Use Suitability Map, page 6 in the Appendix.

OPEN SPACE AREAS

- 17. Preserve and maintain existing open space areas.
- 18. Allow the use of open space areas for hiking trails and passive recreation where appropriate. Prohibit off-road motorized vehicles.
- 19. Obtain open space and trail easements in favor of the City of Belmont over privately held open space land when cluster developments are approved.
- 20. Coordinate trails on publicly owned open space with opportunities to expand trails onto large tracts of privately held open space, including a trail connection from Carlmont Drive to Water Dog Lake.

COMMUNITY DESIGN

21. Grading Design Standards

- a. Use design standards for all grading, including grading for geologic mitigation and the development of roads and houses, to ensure that development meets the following criteria:
 - 1. that changes from natural grade are minimized;

2. that stabilization planting for grading areas is provided prior to the normal rainy season;
 3. that standards to minimize erosion from hillside grading operations are developed; and
 4. that site preparation and grading is visually harmonious with surrounding land.
 5. All trees, and any shrubs over 6 feet in height, which are removed shall be replaced in a ratio of 3 to 1 with the same species. Where the same species is not obtainable, the replacement plants shall be native to California.
 6. A maintenance and monitoring plan is required to assure success of revegetation. The plan shall provide for continued maintenance over a period of three years. The revegetation should be successful to 90 percent of the original number of revegetation plants. Annual replanting during the monitoring period of failed vegetation is required to maintain the 90 percent performance standard. Annual reports are required to be submitted to the Community Development Department describing the effectiveness of the revegetation program and steps necessary to maintain the 90 percent performance standard.
- b. Restrict earth moving operations during the winter to minimize erosion and slope destabilization.
 - c. Areas which have been disturbed by previous grading and will not be part of the areas necessary for construction of development improvements shall be repaired and revegetated.

22. Building and Driveway Design Standards

- a. Require fire retardant building materials for residential development to be used in all structures in the Western Hills Area to the maximum extent feasible.
- b. Require driveways in the Club Drive area to be of sufficient width to accommodate parking of three vehicles side by side (27 feet), in order to minimize parking impacts in the area and provide sufficient on-site parking for five vehicles, two in a garage. Curb cuts and driveway depths should be of sufficient size to provide ease of access and maneuverability to the parking area.
- c. Design and placement of structures shall conform to the topography of the site. To the maximum extent feasible, the following shall be incorporated into the building design:
 1. Minimize large vertical elevation and roof surfaces;

2. Include terracing and stepping of buildings in order to conform with site topography; and
3. Minimize off-site light and glare by using unobtrusive directional lighting.

23. Protect Public Views

- a. Site and design new development and landscaping to protect public views, particularly from the Hastings Drive and Hallmark developments toward San Francisco Bay.
- b. Site and design structures to maximize public view preservation.
- c. Design new development to preserve the aesthetic qualities of the canyon area west of Hastings Drive.

TRANSPORTATION AND CIRCULATION

24. Mitigate Geologic Hazards Prior to Road Improvements

Implement appropriate mitigations, as recommended by the geotechnical investigations, for each application to improve and extend roads into areas of geologic hazards. These are areas characterized as Sbs, Sff, Pfs, Pd, and Pdf. (See Map 3.)

25. Design Road Extension to Protect Natural Resources

Insure that extensions of roads into the Western Hills areas are designed to protect natural resources by locating roads:

- a. in low and moderate slope areas and avoiding steep areas to minimize grading;
- b. to minimize removal of existing trees or major vegetation resources; and
- c. to protect existing creeks and riparian corridors.

26. Development of Road Access West of Hastings Drive

- a. Limit the extension of Carlmont Drive to the area along the valley floor between the current terminus of the improved road and the vicinity of the existing inlet at the creek terminus to the south. Other road extensions into this area should not be permitted.

- b. Develop Old Club Drive as a one-way private road for access to all bordering privately owned parcels. Require a road improvement plan which resolves the design, geologic stability, and financing of road improvements along the entire unimproved road prior to granting building permits for a new structure or any further subdivision.

27. Development of Road Access East of Hastings Drive

- a. Access to unsubdivided lands east of Hastings Drive should be provided by extending Geraldine and/or Lower Vallergera Drive. Access to this area should not be provided by extending Upper Vallergera Drive from Hastings Drive due to steep topography and the extensive grading needed for construction.
- b. Abandon the stub of Vallergera Drive that currently exists from Hastings Drive so that a road cannot be constructed in this location, remove the existing street stub improvements, and conform frontage improvements to Hastings Drive.

28. Traffic Signal at the Intersection of Alameda de las Pulgas

Install a signal at the Alameda de las Pulgas/Carlmont intersection. All new residences should be required to contribute toward the cost of this traffic signal.

29. Annexation of the Area Near Witheridge Road

Require property owners to resolve the design and financing of road improvements for Witheridge Road along the entire unimproved road and the design, number, and location of building sites proposed for this area prior to the City considering annexation of this area. Development of this area should be consistent with the HROP land use designation.

30. Require that New Development Finance Road Improvements

Require that applicants for new development benefitting from road improvements and road extensions finance the cost of such improvements including, but not limited to road design, drainage, mitigation or elimination of geologic hazards, and construction of these improvements.

31. Require Undergrounding of Utilities

Require that all new utility lines and extensions of utility lines be placed underground.

32. Hillside Road Standards

Apply the hillside road improvement standards for new roads in the Western Hills area in order to allow road standards to be responsive to the local physical conditions.

INFRASTRUCTURE

33. Drainage

- a. Require all new proposed development to provide a detailed storm drainage runoff analysis of impacts to the respective drainage area together with a schedule of necessary improvements prior to project approval.
- b. Costs of new storm drainage facilities and system upgrades necessary to accommodate development under this area plan shall be born by the respective developments.
- c. Roadway and driveway lengths shall be kept to the minimum necessary to minimize storm water runoff.
- d. Short-term and long-term erosion control measures shall be made a part of new residential development.

34. Water and Sewer Service

- a. Require all proposed development to provide preliminary plans illustrating how water service will be provided, including the locations of any needed off-site easements.
- b. Looped water mains shall be required for all new development, or an alternative acceptable to the Water and Fire Protection districts.
- c. Require new development to demonstrate the availability of sewage treatment capacity prior to approval.

