

Hillside Development Guidelines Manual



City of Colorado Springs

HILLSIDE DEVELOPMENT DESIGN MANUAL

PREPARED BY:

PLANNING, DEVELOPMENT, AND FINANCE DEPARTMENT DEVELOPMENT SERVICES ZONING
ADMINISTRATION

PROJECT TEAM

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How to Use Manual

This manual applies to lands within the hillside areas of the City of Colorado Springs that are characterized by significant natural features that include ridgelines, bluffs, rock outcroppings, vegetation, natural drainageways, wildlife habitat, geologic conditions, and slopes that contribute to the attractiveness of the community. The City has identified these areas and placed them within the HS -Hillside Overlay Zone. The Official City Zoning Map designates the specific properties which are included within the Overlay Zone. The HS overlay may be used in conjunction with any zone district in the City.

The provisions of this manual shall apply to any and all of the following activities:

- Any lands in which new or enlarged building activity will occur;
- Any lands in which vegetation will be removed; and
- Any lands in which grading or any disturbance will occur.

This Manual is intended to be a valuable reference, providing all of the instructions and information necessary to allow developers, contractors, homeowners and other interested persons to develop and maintain hillside properties in an environmentally sensitive fashion. This Manual incorporates code standards and requirements with recommended guidelines; it contains the Hillside Area Overlay Zone, as approved and found within the City's Zoning Code. (Refer to Appendix A.)

Generally, the following presents a quick guide for the user to understand the questions that should be answered to comply with the City's development process for the hillside areas:

HILLSIDE DEVELOPMENT OVERVIEW

- 1. What are the City's hillside design objectives?**
- 2. What is the review process ?**
- 3. What is required to be submitted?**
- 4. How can a plan be developed?**
- 5. How can City standards and guidelines be met?**

The answers can easily be found in this Manual. This Manual is intended to be "user friendly" and comprehensive. If you have suggestions or comments we would be interested in hearing from you; please contact the City Zoning Administration Office, 101 West Costilla Street; Suite 212, Colorado Springs, Colorado 80903 or telephone (719) 578-6919.

Introduction

The City has recognized that areas which are characterized by ridgelines, bluffs, view corridors, foothills, mountain backdrop, excessive slope, unique vegetation, natural drainage, rock outcroppings, geologic conditions, wildlife habitats, and other physical factors, are significant natural features worthy of preservation. Performance standards for hillside development have been developed and are incorporated into the Zoning Code as an overlay zone, referred to as the "Hillside Area Overlay". This manual is intended to serve as the design guidelines for the development of hillside areas.

The Manual provides all of the instructions and information necessary to allow developers, contractors, homeowners and other interested persons to effectively, sensitively and conscientiously develop hillside properties. The Manual incorporates code requirements with recommended design standards and guidelines. The user of the Manual will hopefully find it useful in understanding the City's objectives for regulating hillside development.

The user will find particularly helpful information regarding hillside design issues that the City is most interested in promoting. Specifically, the Manual will show:

- * How to minimize the disturbance to the terrain;
- * How to preserve and incorporate nature features and vegetation into site design;
- * How to mitigate and enhance visual impacts and opportunities;
- * How vehicular access and utilities placement must be considered to minimize destruction to hillside characteristics;
- * How to use supplement landscaping to enhance hillside property;
- * How to use architectural features to conform to hillside characteristics; and
- * How to enhance streetscape appearance.

Hillside development on privately owned property is inevitable; how the hillside will be developed is a matter of communitywide concern. If development occurs in accordance with this Manual, it will be done in a manner sensitive to the natural functions of the land and preserve and protect one of the City of Colorado Springs most significant attributes -- its mountain gateway into the Rockies.

Intent/Purpose

The purpose of the Manual is to provide all of the instructions and information necessary to allow developers, contractors, homeowners and other interested persons to effectively and conscientiously develop hillside properties. The Manual incorporates code requirements with recommended guidelines. The user of the Manual will hopefully find it useful to understand the City's objectives for regulating hillside development.

The City of Colorado Springs desires to have development that occurs within the hillside areas adhere to specified review procedures, performance standards, and design guidelines which implement the following design objectives:

- 1.) To enhance the quality of life of existing and future residents by the preservation and protection of the City's most significant natural feature.
- 2.) To contribute to the natural hillside character of the existing neighborhoods and developments in the area by limiting the alteration to topography and natural drainageways.
- 3.) To preserve and protect the unique and special natural features and aesthetic qualities of the hillside areas.
- 4.) To ensure that new development is sensitive to the existing natural setting and that the protection design minimizes the removal of significant vegetation and natural features to the greatest extent possible.
- 5.) To preserve and protect wildlife habitat.
- 6.) To integrate natural features into project design.
- 7.) To respect the existing views to the mountains and foothills, and privacy of the adjacent homes.
- 8.) To avoid geologic conditions which may pose a threat to property and life.
- 9.) To encourage the use of innovative design techniques and solutions which minimize disturbance and protect sensitive areas.
- 10.) To recognize community concerns related to development and its impact upon visually significant hillsides, ridgelines, bluffs, and landforms.

City Comprehensive Plan Conformity

This Manual endeavors to implement numerous goals, objectives, policies, and recommendations of the City of Colorado Springs Comprehensive Plan, including, but not limited to the following:

- *Goal 5.1:*
- *Policy 5.1.4:*
- *Recommendation 5.1.R4: (F) & (L)*

- *Goal 9.2:*
- *Policy 9.2.1:*
- *Recommendation 9.2.R2:*

- *Goal 9.4:*
- *Policy 9.4.3:*

- *Goal 9.5:*
- *Policy 9.5.3:*
- *Recommendation 9.5.R.1:*

- *Goal 16.1:*
- *Policy 16.1.1:*
- *Recommendation 16.1.R2:*
- *Recommendation 16.1.R6:*

- *Goal 16.4:*
- *Policy 16.4.1:*
- *Policy 16.4.2:*

Please refer Appendix K for the specific language on each of the noted Goals, Objectives, and Recommendations of the Comprehensive Plan.

Ian L. McHarg, teacher, landscape architect and planner, writes in his book, Design with Nature, "*When developments are built upon beautiful, dramatic or rich sites; their excellence often results from the preservation and enhancement of the natural features, rather than the obliteration of them.*"

Hillside Development Plan (HS/DP) Review Process

Prior to obtaining a building permit for a HS zoned lot, both a subdivision plat and HS development plan must be approved by the City. The development plan is the document which establishes the project design parameters while the subdivision plat formalizes the lot layout pattern, and street and drainage designs.

Applications for development plans are processed by the City's Development Services & Comprehensive Planning Division . Additional information regarding the HS development plan requirements , review procedures and appeal process is set forth in Appendix A. HS Site/Grading Plans submitted in conjunction with the building permit review process must act to implement the design parameters established with the approved development plan.

Hillside Site Lot Grading Plan (HSS/LGP) Review Process

OVERVIEW

This section provides persons who are contemplating constructing a new house or building an addition onto an existing home, the information necessary to allow them to be able to successfully submit and receive City approval of Hillside Site / Lot Grading Plans (HSS/LGP). The section includes:

- Design review criteria
 - Required plan contents and information
 - Review process procedures
 - Post construction follow-up procedure
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CRITERIA

By ordinance, construction activity, including grading or removal of vegetation, shall occur on lots or parcels subject to the Hillside Overlay Zone until a Hillside Site Plan/Lot Grading Plan has been approved by the Development Services Division. Hillside Site Plan/Lot Grading Plans will be evaluated for consistency with the underlying zoning district development standards, approved development plan standards, and in accordance with the following site design hillside overlay zone review criteria:

- Have the development standards of the zone or Development Plan (i.e., setbacks, maximum height, lot coverage, drive grades, access points etc.) been met?
- Is terrain disturbance minimized?
- Have cuts and fills been minimized?
- Has the natural land form been retained?
- Have visually compatible stabilization measures been used for cut & fill slopes?
- Have natural features such as slopes & rock formations been incorporated into the site design?
- Is natural vegetation preserved and incorporated into the project design?
- Has emphasis been placed upon preserving Scrub Oak and pines within the front yard area as this has a major impact upon the appearance of the streetscape and the character of the neighborhood?

- Has emphasis been placed upon preserving healthy and significant stands of Scrub Oak and pine trees?
 - Have visual impacts upon off-site areas been avoided or reasonably mitigated?
 - Has the structure been sited so that there is a mountain or hillside backdrop?
 - Has the structure been sited off from the ridgeline?
 - Has existing vegetation been preserved to soften the structural mass of buildings located in highly visible areas?
 - Has supplementary native landscaping been used to soften structural mass of highly visible building sites?
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APPLICATION CONTENTS AND REQUIRED INFORMATION

Hillside Site / Lot Grading Plan Applications consist of the following two components:

- A Hillside Site / Lot Grading Plan
- A Hillside Building Elevation Drawing

HILLSIDE SITE / LOT GRADING PLAN. A Hillside Site / Lot Grading Plan is required for all persons desiring to construct, modify, grade, remove vegetation, and/or disturb properties located within the Hillside areas. Appendix C set forth all the information required to be illustrated on a Hillside Site / Lot Grading Plan.

HILLSIDE BUILDING ELEVATION DRAWING. A Hillside Building Elevation Drawing is required for all persons desiring to construct and modify structures located within the Hillside areas. A checklist for a Hillside Building Elevation Drawing with all required information is included as part of the Hillside Site / Lot Grading Plan Submittal Checklist. (See Appendix C.)

REVIEW PROCESS PROCEDURES

- **Preapplication Conference:** (Optional) Prior to planning and designing a project, the applicant should review the Hillside Development Design Manual and the Hillside Overlay Zone District section of the City Zoning Code, which establish the requirements and guidelines for acceptable hillside development. It is strongly suggested that the applicant contact and/or make an appointment with the City Zoning Administration staff to discuss the project. At that time the nature of the project should be described. Site visits may be appropriate during this stage. The City staff will clarify review procedures,

design guidelines, and submittal requirements. Critical specific issues applicable to the project can be identified and preliminary consensus reached.

- **Preliminary Design Review:** (Optional - Preliminary review is an informal process enabling the applicant to receive written input from City staff on the basic concept of the development proposal.) This step is optional but is recommended for projects requiring extensive grading, or the removal or alteration of significant vegetation and natural features. Preliminary review allows the applicant to meet with the City staff to discuss basic intentions and plans prior to undertaking detailed design. At this step, site analysis and design, location of structures, grading, basic form of buildings, vegetation and significant feature protection and removal are important. Building elevations and other information may be discussed but kept in a preliminary form. Sites visits may again be appropriate during this stage.
- **Formal Hillside Site / Lot Grade Plan Application:** (Required) A complete Hillside Site / Lot Grading Plan with a Hillside Site / Lot Grading Plan Submittal Checklist must be filed with the City Zoning Administration Office. A Hillside Site / Lot Grading Plan is required for all persons desiring to construct, modify, grade, remove vegetation, and/or disturb properties located within the Hillside areas. A Hillside Building Elevation Drawing is required for all persons desiring to construct and modify structures located within the Hillside areas. Plans and Drawings may accompany and be included with architectural drawings submitted to the Regional Building Department in pursuit of a building permit. See Appendix C. for a copy of the HSS/LGP Checklist and content requirements.
- **Staff Review and Evaluation:** (Required) Upon receipt of a Hillside Site / Lot Grading Plan and Submittal Checklist, City Zoning Staff will review the plan for compliance with content requirements, design guidelines, and hillside standards. During their review City Zoning staff will visit the site, and review the plan for compliance with following evaluation standards:
 - Underlying Zoning District Standards.
 - minimum lot area
 - minimum front, side, and rear yard setbacks
 - maximum lot coverage
 - Development Plan Standards.
 - building lots and envelopes
 - vehicular access
 - location of utility lines
 - retention of significant vegetation
 - specified hillside building height
 - location of preservation areas
 - geologic hazard avoidance and mitigation
 - Hillside Overlay Zone Standards and Design Standards
 - minimize terrain disturbance
 - preservation and incorporation of natural vegetation
 - mitigation of off-site visual impacts
 - maximum building height

- access and utilities
 - architectural features
 - construction practices
 - revegetation
 - wildlife habitat preservation
 - streetscape appearance
- **Final Hillside Site / Lot Grading Plan Decision.** (Required) Upon completion of their review City staff shall do one of the following: approve the plan, as submitted; approve the plan, subject to conditions; or deny the plan. All approved plans will be stamped and dated. Any conditions of approval will be clearly noted.
- **Hillside Site / Lot Grading Plan Amendments, Revisions & Modifications** (Optional) An amendment, revision, and modification to a plan is considered a new application and must proceed according to the procedures as if it were a new application. Amendments should be clearly identified upon the plan either by highlighting, outlining the amended area, or providing text describing it.
- **Appeals** (Optional) Any administrative action or decision of City Staff under the provision of the Hillside Overlay Zone District or this Manual may be appealed to the City Hearing Officer in accordance with City Code Section 14.1-4-204.B.5.b.

CONSTRUCTION FOLLOW-UP

- **Inspections.** The City Zoning Administration Office will follow-up and conduct inspections to determine compliance with the approved Plans and the provisions of the Hillside Overlay Zone District and other City Code provisions. Most sites will be visited twice after construction commences.

- The initial inspection will be scheduled to occur shortly after the site has been cleared, foundation constructed, and while the framing is in process. The propose of the initial inspection will be to determine compliance and to prescribe mitigation or remedial actions which can be taken, at an early stage, to correct necessary violations. A fuels management inspection will occur at the same time. Required corrective actions will be forwarded to the applicant and full compliance is expected by final inspection.

The final inspection will be scheduled to occur shortly after construction has been completed. The propose of the final inspection will be to evaluate the overall site and building design in relation to its impact upon the site, the streetscape, and surrounding area. Determination of compliance and the prescription of additional mitigation actions may be necessary. A final fuels management inspection will also occur at this time.

- **Evaluation Letter.** The City Zoning Administration Office will provide an evaluation letter to all applicants of hillside development. The letter will

address plan and code provision compliance, provide the City staff's evaluation regarding the site and building's design, and City staff's opinions regarding its impact upon the hillside and surrounding area. A sample evaluation letter can be found in Appendix G.

- **Enforcement.** The City Zoning Administration Office is authorized to pursue enforcement actions including, but not limited to, the issuance of a Notice and Order for violations of the approved Hillside Site / Lot Grading Plan and/or the provisions of the Hillside Overlay Zone District, in accordance with the procedures set forth in Section 14.1-4-1101 through 14.1-4-1110 of the City Code.

Hillside Site Lot Grading Plan Design Primer

OVERVIEW

The purpose of this section is to provide the user with a "how to guide" to the development of a Hillside Site / Lot Grading Plan (HSS/LGP) which will meet the City's standards and design guidelines. The section is not intended to prescribe the only method in which a HSS/LGP plan can be developed, but outlines the important steps and issues which should be considered.

HOW TO PREPARE A HILLSIDE SITE / LOT GRADING PLAN

INVENTORY SITE FEATURES

ANALYZE SITE ISSUES

EVALUATE CONCEPT ALTERNATIVES

CHOOSE FINAL DESIGN

MEET CITY OBJECTIVES

SITE INVENTORY

Inventory the natural and physical conditions of the site. Determine the suitability of the site for the project. It is not necessary to study each of the conditions in detail. Rather, the applicant should understand which conditions the project's success depends upon. A Site Inventory Feature Checklist is included in Appendix E. for your use and information.

- **Natural Features**

Does existing natural features provide opportunities or constraints to development? The existing natural features should be inventoried, in narrative and perhaps map formats. A complete overview of the natural features which may be impacted by the development should be reviewed. The natural feature's functions, possible hazards, unique significance, and their specific characteristics should be understood and respected.

- **Identification Of Geologic Hazards**

An important aspect of selecting the right lot for a home, or selecting the appropriate location to site a structure, is the knowledge of the possible existence of geologic hazards.

STEPS TO BUILDING SUCCESSFULLY IN GEOLOGICAL HAZARDOUS AREAS

- Review the Geologic Hazard Study commissioned by the developer. This should be done prior to the purchase of the lot if possible but certainly prior to determining where the structure will be located and how the lot will be graded.

- Have a soils test performed; site the structure in the area with the best soil and the least amount of geologic hazards.
- Have a foundation engineered which is designed to withstand the soil and geologic conditions existing on the site.
- Make sure the foundation is constructed in accordance with the requirements of the soils report and the engineered design.
- Insure that the foundation is well drained and that there is positive drainage away from the foundation.
- Incorporate low-water/xeri-scape plant materials into the landscaped design: especially near your foundation.

Colorado Springs contains a variety of geologic hazards, including , but not limited to, the following:

- Expansive soils and rock
- Unstable or potentially unstable slopes
- Landslide or potential landslide areas
- Debris Flows
- Rockfall
- Subsidence
- Shallow Water Tables
- Springs
- Flood prone areas
- Collapsing soils
- Faults

Knowledge of whether any of these geologic hazards are present on a property is an important factor in determining: how, where and even if a project will be built. Most developers commission Geologic Hazard Studies prior to designing their subdivisions and selling lots. It is suggested that these studies be reviewed prior to the purchase of the lot or at the very least, prior to the selection of the building location and design of the Site/Grading Plan. If no Geologic Hazard Study exists for the development under consideration, a geotechnical engineering firm should be hired to perform a site reconnaissance and geologic hazard review.

A soils test will be required to be performed prior to the issuance of a building permit. The foundation must be designed, by a registered civil engineer, to withstand the geologic forces anticipated to be exerted by the specific soil condition. In order to be sure that the structure is being placed in a location which has an acceptable level of geologic hazard risk, and the best soil conditions, it is recommended that a soils test be performed prior to the final design of the HS Site/Grading Plan. This approach will not only provide the comfort of knowing the structure has been built in the safest location on the lot (in terms of exposure to geologic hazards) it will also save money. Many geologic constraints can be overcome through special foundation designs or engineering techniques, but these can significantly increase the cost of your structures.

If a driveway needs to be graded vegetation removed in order to get a soils rig onto a lot, please contact the Zoning Office (578-6919) and we will review and pre-approve the preliminary grading and vegetation removal prior to submittal of a final

Site/Grading Plan. However, under no circumstances should driveways be rough graded or Scrub Oak or pine trees be removed from the your lot prior to coordination with the Zoning Office even for the purpose of providing access for soils testing equipment.

- **Facilities and Services**

Are adequate facilities and services available to serve the site and development? Consider where the utility service lines will be connected into the public system and how these lines will be brought to the new homesite, in terms of the grading required and the impact upon the existing vegetation. Whenever possible, driveways and utility services lines should share the same cut. Assess the impact that wastewater service lines may have for downsloping lots where sewage must either be pumped up hill or through downhill adjoining lots.

- **Access**

How will vehicles access the site? Driveways must meet City and fire protection design standards for size, location, surface, grade, and access points. Can access be provided to the house site with minimal impacts to other site features? In general, the driveway should follow the natural grade of the lot to the extent possible. The City encourages access to utilities and to the street be included in the same general vicinity. Two cuts, one for driveways and the other for utilities, through hillside vegetation and topography is not an acceptable practice.

- **Land Use**

Is the proposed development compatible and consistent with the character of the area and neighborhood? For the most part, land use for a parcel in the Hillside zone is determined during the zoning classification and development plan review processes.

SITE EVALUATION AND ANALYSIS

Once the development program and site features have been inventoried the feasibility of developing and constructing on a specific lot or site can be analyzed and evaluated. As addressed previously, many natural and physical conditions could affect the success of the project. While all the factors have been inventoried, only a few will present constraints and opportunities to be mitigated or enhanced.

"The process of inventory and analysis will suggest whether or not the site is suitable for the intended project, which area hold up best and which areas are most vulnerable..."

Fawn Hayes Bell

**"Landscape and Site Improvements
Design Guidelines"**

***Prepared for:
The Water Resources Department
City of Colorado Springs***

First, determine whether a site feature is a constraint, an opportunity, both, or is of no consequence to the project. Next, evaluate the constraint to determine whether it can be mitigated or the opportunity enhanced. Does the mitigation or enhancement of one feature cause additional problems or added value to other features? Does the action render the project still feasible or present overwhelming economic ramifications?

- **Constraints**

Features that are constraints are those which restrict or limit the development potential of the property. Constraints should be analyzed to determine whether they can be minimized, mitigated, or altered to a degree which would allow development to occur. If the constraint can not be overcome or would be too costly to mitigate, then the project is not feasible and additional resources of time, energy, and money should not be consumed. If the constraint can be overcome or mitigated without too great of expense, then the project planning should continue. For example, if the potential site has shallow underlying depth to groundwater or free flowing springs, which could not be controlled without extensive collection systems and/or great costs, then the project is probably not feasible.

- **Mitigations**

Constraints that can be overcome by making them less severe or intense are said to be mitigated. Mitigative actions may include eliminating the constraint, utilizing design alternatives or engineered solutions which neutralize the constraint. Mitigation actions need to be evaluated to determine whether a positive cost benefit relation exists.

- **Opportunities**

Opportunities are site features which provide favorable circumstances not enjoyed by other sites. Opportunities should be analyzed to determine whether they can be enhanced and used to benefit the project. Projects which utilize opportunities will certainly meet City Hillside objectives and add value to the property. For an example, the placement of a structure to preserve a stand of mature trees will enhance the natural setting of the site and maintain its hillside character. Maximizing solar gain by orientating a structure to face south is an opportunity.

- **Enhancements**

By incorporating natural features and adding supplemental native landscaping into a site design, the site can be enhanced. For example, the use of natural materials and earth tone colors on hillside structures is considered an enhancement.

CONCEPTUAL ALTERNATIVES

It is essential to evaluate and study several alternative site layout concepts. Alternative layouts can be generated inexpensively and need not be carefully drawn or detailed in the initial preliminary design process. It is enough, at first, to draft only the essentials of a scheme in a simple form. If one scheme lends itself to comparison to another, it can be developed yet as another scheme and so on and so forth. Alternatives should always be reviewed prior to committing to a final plan. If a preconceived design exists, the evaluation can be used to test, verify, or modify the concepts. In general, initial concepts seldom work the best, but rather the third or fourth scenario combines the best of each and will eliminate the problems.

STRATEGIES FOR DEVELOPING ALTERNATIVE PLANS

**DO NOT ASSUME THERE IS ONLY ONE WAY TO MAKE A PROJECT WORK DO
NOT BE SATISFIED WITH THE FIRST ATTEMPT
QUESTION EVERY ACTION AND REACTION
A LOT OF IDEAS CREATE BETTER SOLUTIONS
LOOK FOR THE SECOND RIGHT ANSWER
ASK "WHAT IF" QUESTIONS
CHALLENGE THE RULES**

- **Evaluate**

As previously discussed, every site has both opportunities and constraints; it is now helpful to map and illustrate them. Once the previous inventory information has been collected and the alternative design schemes drafted, this information must be organized to permit an easy evaluation of the best development solution. The evaluation should answer the questions, objectives, and requirements addressed in the already written development program.

1. **The preferred development concept will emerge and synthesis reached as the developer weighs and evaluates the alternative concepts and answers the following questions:**
2. **Which plan best satisfies the development program's objective and requirements?**
3. **Which plan best fits the site?**
4. **Which plan best satisfies the City requirements and guidelines?**
5. **Which plan can be implemented with what degree of effort?**
6. **Which plan provides reasonable cost benefits?**

- **Synthesis**

The result of the evaluation produces a summary site analysis which illustrates the interrelationships of a site's spatial, natural and physical conditions with the

objectives and requirements of the development program. The analysis should identify the portion of the parcel most suited to development as well as areas to be left undisturbed. Areas in need of more detailed evaluation also should be identified.

- **Selection**

At this point the right scheme for development for the site should be obviously clear. Now a preliminary HSS/LGP plan can be prepared. This plan incorporates all of the factors previously discussed with the additional information required by the City and other agencies. The plan represents the final draft prior to the preparing of the final plan. Often, it will include architectural renderings and profiles.

The homebuilder will now have a reasonably precise understanding of the project. Once a confidence level has been reached that the preliminary plan will fulfill the development objective for the site, then the detailed final plan with engineering studies and construction drawings can be prepared.

HINTS FOR HILLSIDE SITE / LOT GRADING PLAN SUCCESSFUL APPROVALS.....

1. If you have a difficult site, call the Zoning Office for a pre application conference and site visit. Working out tough solutions together is a good policy.
2. Submit a complete application. A complete application includes:
 - A HSS / LGP plan with all of the required information.
 - A Hillside Building Elevation Drawing.
 - A HSS / LGP plan Submittal Checklist, signed and certified.
3. Always meet or exceed City requirements or guidelines.
- 4.. Use this Manual, it is intended to make your job easier.
5. When in doubt ask the question or request an explanation.
6. And finally, ***DESIGN*** your project to maintain the Hillside character of the site by:
 - Minimize the disturbance to the terrain, avoiding no cuts or fills unless they are necessary.
 - Preserve and incorporate nature features and vegetation, save significant mature trees, rock formations, and stands of vegetation, particularly in the front yard.
 - Mitigate visual impacts, by keeping structures below ridgelines, stepping structures with the slope, and minimizing the height of structures.
 - Place utilities and driveways in the same cut.
 - Add supplemental natural landscaping to compensate for vegetation losses.

- ***Design the building to fit the site, rather than modifying the site to fit the building.***
- Use architectural features to conform to hillside characteristics, use natural materials, earth tone colors, and broken roof and wall components.
- Enhance the streetscape appearance by saving front yard vegetation, staggering setbacks, and use minimal sized driveways that take up grade.
- Avoid slopes of 25% or greater.
- Identify and mitigate geologic and other hazards.
- Use retaining walls as only the last resort, they should not be built to create flat lawns.
- Take care during construction to minimize the destruction of natural features.
- Control excess drainage, soil erosion and sedimentation during and after construction.

INSTRUCTIONS: HOW TO CALCULATE HILLSIDE HEIGHT FOR SINGLE-FAMILY HOMES

The following is a step by step procedure for calculating the height of structures in the Hillside Area Overlay Zone, based upon the proposed method and standard:

- 1. On the site plan, building grade and finished grade contours shall be shown.**
 2. Accuracy of the contour information is essential. The plan scale should be a minimum of 1 inch is equal to 20 feet and the contour interval not less than two feet. It is encouraged that the site plan be drawn to meet "National Map Accuracy Standards". The City's FIMS mapping system information may be a reliable source of building grade contour information. If the site has been disturbed through the construction of streets or utility installation the disturbed contours will need to be re-surveyed.
- 1. On the site plan locate and determine both a site permanent benchmark and a proposed structure's benchmark with elevations identified and recorded.**
 2. The structure's benchmark should also be shown the building elevation drawing. Two benchmarks shall be identified at the actual site for verification by zoning personnel. Site benchmarks should be a permanent monument such as a chiseled curb spot, top of fire hydrant or other fixed fixture. A structure's benchmark should be located to be above the proposed finished grade and easily identified such as top of slab on the garage floor, chiseled foundation spot, or other visible point.
- 1. On the site plan locate and determine the major corners of the proposed structure.**
 2. Major corners are the points where the structure's walls change directions for distances of eight (8) feet or more; including attached garages and additions, but not including decks, patios, bay windows, chimneys, or similar projections.
- 1. On the site plan at the major corners record the elevation where the structure intersects the building grade.**
 2. Remember "building grade" is simply the topography and elevation of the lot immediately prior to your proposed construction. It may have been previously graded in accordance with a City approved grading plan or may still be in its natural condition.
- 1. On the building elevation drawing, draw front, rear, right, and left side profiles of the structure. The preferred drawing scale should be 1/4 inch is equal to one foot.**

2. Building elevation drawings are required as part of the building permit plan application. Your architect will provide these.
1. **On the building elevation drawing, indicate the building grade at each of the major corners and connect with a line.**
2. From the site plan transfer, mark, and illustrate the building line where the structure intersects the building grade surface on the building elevation drawings.
1. **On the building elevation drawing, from the major corners, measure vertically to the maximum height specified on the approved Development Plan, or to 35' for a sloped roof or 30' for a flat roof, which ever is less. Connect these points for each side profile with a straight line.**
2. The horizontal lines represents the maximum hillside building height
1. **On the building elevation drawing, if all portions of the roof fall below the horizontal lines, the structure is in compliance with the height standard. If any portion of the roof exceeds the horizontal lines, the structure is not in compliance.**

IF YOU HAVE ANY QUESTIONS REGARDING THE HEIGHT CALCULATION METHODOLOGY Contact [Development Review Administration](#) .

Design Guidelines

OVERVIEW:

LIVING AND BUILDING HOMES IN THE HILLSIDES

So you decided to build a home in the City's hillside areas. You probably made this decision based on a lot of factors. The hills are where you can actually feel like you have moved to the Colorado mountains. There are trees and nature and views that can mellow even the most stressful of workdays. This is where the City meets the forest.

There is a cost to hillside living, however. Beyond the price of the real estate homeowners must contend with a delicate ecosystem, slippery steep hills in the winter, wind conditions and wildlife. Because the foothills are such a special area, there are a set of rules that apply to everyone who chooses to live there. Whether building a new home or you are in a house that has been around for 20 years, there are strictly enforced guidelines that regulate how you may treat your lot. These requirements are covered in the following pages.

BEFORE YOU BUILD... The question of how to build in the hillsides should be addressed by starting miles from your proposed home site. Looking toward the mountains it is easy to see how the ecotones change as you head up the sides of the foothills. Prairie gives way to Scrub Oak and this in turn is replaced by Ponderosas, Cedars and other trees. It is not a smooth ascendance, rather hills top out in ridgelines and small peaks reach toward higher ones. Around here, all is ultimately capped by the grandeur of our most famous landmark, Pikes Peak. There is, however, an important factor to keep in mind, when placing a dwelling to maximize these views. When a house is sited for a breathtaking view, perhaps high on a hilltop or ridgeline, the folks down below have a breathtaking view of your house. With such prime real estate comes some important responsibilities.

Homes in prominent locations must be sited and designed with the following in mind:

- Homes need to be setback a far enough distance from cliffs or hilltops so that the structure does not appear to be perched on the edge.
- A mountain or other landform should act as the backdrop to the home. This is highly preferable to having the building project into a blue sky background like the parapet along the top of a castle. If the house does break the plane of the natural backdrop, it should be designed to mimic the natural lines of the hillsides.
- Existing and new vegetation should be placed to soften the mass of the home from off site. An effective vegetative cover will veil most of the lower level of the house.
- Dark or earthtone colors should be used to make the home less conspicuous as seen from off site. White and other light colors should be avoided.

- Outside lighting should be muted and directed so that it does not spill over on to neighboring properties.
- Dwellings should be placed far enough apart to reveal views of the Front Range and other significant ridgelines from the street and from the houses downhill.
- Dwellings sited to maximize views at the expense of vegetation will be denied.

As you approach the site, the potential house location should be viewed from a number of perspectives. Before placing a house on a lot there are many questions to be asked. Are the soil types suitable for drainage and have you addressed any geotechnical hazards? Is the slope appropriate for the style of the house and will it allow you to take advantage of the solar orientation while minimizing the impacts of the wind. Is the house set high enough to drain into the sewer system, yet low enough to allow you to make it up the driveway on a wintry day? Although these are all very important considerations, many are secondary to the need to save the natural features of the site and incorporate them into the site design.

The right to live in the City's hillside areas goes hand in hand with the responsibility to build in an environmentally sensitive manner. If the street you have chosen had a woody feel when you selected the site, it is your obligation to see that this feel still exists when you are finished. The house will need to appear as if it was designed for the site when viewed from all sides, but particularly so from the street. This goal can be accomplished by incorporating the following:

- The driveway should not be the predominant feature of the front yard. Paved and structural areas must be softened by preserving the pre-existing vegetation.
- Setbacks should be staggered to avoid a canyon effect.
- Shared driveways are encouraged, when appropriate.
- Cuts and fills are to be minimized and vegetation is to be preserved.

BUILDING MULTI-FAMILY, OFFICE, INDUSTRIAL AND COMMERCIAL PROJECTS IN THE HILLSIDES

Single-Family homes are not the only projects built in the HillSides. Multi-family, commercial, office and industrial projects can also be appropriate if care is taken in the design of these projects to insure that important hillside characteristics are maintained.

The following is a list of design standards and guidelines which should be addressed in siting multi-family, commercial, office or industrial projects within Hillside Areas:

- Multi-family buildings should be designed in such a manner to provide the greatest degree of privacy possible for the individual structures as well as to adjacent properties.
- Buildings placed upon downslope lots should be sufficiently screened by vegetation to avoid degrading views from off-site.
- Existing vegetation, especially mature trees and groves of Scrub Oak should be integrated into the project design.
- For building sites in proximity to ridgelines, additional height restrictions may be necessary to insure that rooflines will be located below the natural ridgeline.
- Large expanses of flat areas for parking that require cuts, fills or the removal of existing significant vegetation or natural landforms should be avoided.
- Buildings should be sited with different floor elevations to achieve height variation.
- At site perimeters with high off-site visibility, buildings should be sited with a staggered arrangement and screened with mature vegetation to minimize the "wall effect".
- For multi-family projects, stagger alignments of buildings both horizontally and vertically to create unit identity, privacy at entry and private outdoor space, and to share common open space.
- Building sites should be selected so that construction occurs below the ridgeline.
- The roofline, based upon maximum permitted height, should not extend above the line of sight between a ridgeline and any public right-of-way, whether the ridgeline is above or below the right-of-way.
- The slope of the roof should be oriented in the same direction as the natural slope of the lot.
- Significant views of the natural ridge silhouette from public rights-of-way and other public spaces should be retained.
- When a major building elevation will be visible from off-site, appropriate combinations of screening and design treatment should be taken to reduce the bulk of the structure.

Grading, Drainage, Cuts and Fills

Mother Nature rarely offers us a site that fits the shape of a house. When the time comes to

start construction, it is easier to change the terrain than it is to design around the slopes and imperfections of the land. There are two types of changes that can have a great impact on the natural contours of a site: cuts and fills.

Cuts are made when the slope of a lot rises and the house doesn't. This is commonly seen on upslope lots, those that rise away from the street. Fills are made when the house is placed on a pedestal or a pile of dirt intended to hold the home higher than the natural terrain. Both of these changes should be held to an absolute minimum.

There are a lot of reasons given as to why cuts and fills on the lot are desired. They are used for all of the following:

- To create basement walkouts.
- To make flat yards for a play or recreation area.
- To achieve drives with workable slopes.
- To carry drainage away from the house.
- To permit sewage outflow from the basement bath.
- To improve views.
- To reduce the building height calculation.
- To give structural support and frost protection to foundations.
- To make the building design compatible with the existing topography of the lot.

Although some of these reasons are better than others, the City takes a dim view of excessive or unnecessary cuts and fills. Plans which make inordinate use of cuts and fills *will be denied*. Large cuts into a slope usually indicate that the wrong house design is being used for the conditions of a site. Building a flat house on an upward slope is akin to placing the proverbial square peg into a round hole -- it doesn't fit. If a lot runs uphill, then a house should be designed to match that flow. If a lot is mostly flat, then it is not a good idea to dig a basement walkout. Even worse, however, is piling on the fill.

The problem with fill is that it has a tendency to return to the natural grade. A house built on fill is generally less stable than one placed on natural soils. Unless proper compacting and retaining practices are followed, fill will continue to compress on its own. Fill around a house tends to settle or wash into the surrounding vegetation eventually smothering it.

As a rule of thumb, it is safe to observe the following:

"CUTS ARE BETTER THAN FILLS AND NEITHER IS BETTER THAN EITHER"

Design Objectives - Grading

It is in the interest of all to create marketable homes which preserve the natural characteristics of the hillsides. These types of houses sell well, have less negative impacts on the environment and are pleasing to look at. From the perspective of good hillside development, these goals are met by adhering to the following construction and design practices:

- Houses should be designed to fit the site rather than modifying the site to fit the house.
- Foundation corners should match the natural grade as much as possible.
- Limit grading to that which is necessary to construct the house, drive and a limited area for yard purposes.
- Design to retain as much of the natural landform as possible.
- Use foundation systems and home designs to take up grade.
- Use driveways to take up grade.
- On a limited basis retaining walls are acceptable. They are not acceptable when their purpose is to create flat yards.
- Drive-under and/or detached garages are encouraged on very steep grades.
- Site the house and use construction techniques which allow wastewater services to be provided without the use of fill.
- Mechanical solutions to solve wastewater problems are preferable to site modifications.

Standard house designs should only be used if they are designed to work with the existing topographic conditions of the lot

- Avoid an angular appearance of graded areas by smoothing out contours and sloping away from the foundation rather than using retaining walls. Graded slopes should be between 2:1 and 5:1.

Grading Review Requirements

It is difficult to set absolute limits on what is acceptable grading for a hillside lot. Sometimes an exceptional measure may be needed to work a house into a site and these proposals should be discussed with the plan reviewer as early in the design process as possible. In the majority of cases, however, certain limits should not be exceeded. The following standards are used by the Zoning Office as a basis for evaluating proposed grading plans.

- Retaining Walls - If retaining walls are necessary, they should be limited to a 4' maximum height per wall with no more than two tiers.

- Tiers should be separated by at least 4'-6' and each tier should be screened from the street as follows; one 5 gal. shrub every 4' and one 6' tree every 15'. At least half of the trees should be evergreen. Relief may be granted for shorter (height and/or length) retaining walls and for walls which slope back and contain natural plantings. Retaining walls not seen from the street are of lesser concern. Builders are encouraged to use foundations as retaining walls to retain slopes.
- Driveways - The maximum slope is not to exceed 20%. Consideration should be given to the placement of the house so that the driveway may be used to take up grade. Drives longer than 30' should be narrowed to 12' in width as quickly as possible.
- Walkouts - Builders should select sites for walkouts which have a natural fall of at least 8' through the building footprint area. Cuts or fills for walk outs should be designed to minimize the impact upon existing Mountain Mahogany, Scrub Oak and Pines.
- Revegetation - Fill and cut slopes shall be stabilized in a manner which prevents erosion. Acceptable slope treatments may include hydromulch seeding, netting, small retaining walls, and the planting of trees, shrubs and flowers or any combination of these. The appropriate treatment will be determined depending on the specific slope conditions.
- Cuts vs. Fills - Cuts are preferable to fills as they are more stable and have generally less impact on surrounding vegetation and off-site views. Fills greater than four feet are permitted only when there are unusual circumstances such as severe topography or restrictive soil conditions. Cuts and fills should be severely limited in areas with slopes of 25% or more. Front entryway walks are limited to the same fill constraints as the house. If there is a grade change of four feet or more between the driveway and the front entrance, the house design may have to be modified to use steps or decks rather than fill to take up the grade.
- Protecting Vegetation - Grading around the house should be limited to ten feet or less to minimize its impact on existing vegetation.
- Protecting Natural Features - If a site has unique geological features such as mushroom rocks, significant rock outcroppings or cliff faces, extraordinary care must be taken when building on these lots. In order to preserve a sites special attributes, the house should be designed to fit around the significant features.
- Site Excavation - Construction equipment and stockpiled soils should be stored only in areas which are to be disturbed for the construction of the house. Recommended fill storage areas include driveway pad locations and previously disturbed street cuts.

Drainage and Erosion Control

Builders must direct the drainage from their lots so that it either flows into the public storm water system or maintains pre-existing lot to lot patterns. Roof and hard surface runoff should not be concentrated and improperly diverted onto downslope lots. During construction, drainage problems should be temporarily controlled by using straw bales and/or silt fences to slow and filter lot to lot drainage. In no cases should mud or sand be allowed to cross property boundaries. Erosion should be minimized on a site by revegetating the disturbed area of the lot as soon after construction as possible. Slopes exceeding 2:1, must be protected immediately by straw netting, hydromulching, silt traps, riprapping along drainage channels or by using other similar methods.

Working with Vegetation

The image usually associated with living in the foothills is one of homes nestled into a setting of mature pine stands and rolling hills covered in Scrub Oak and Mountain Mahogany. Indeed this vision is so alluring that many of our hillside subdivisions; The Woodlands, Mahogany Vale, Woodmen Oaks and Point of the Pines, bear names that reflect their intended glory. If the overall character of hillside areas is to be maintained, the emphasis must be placed on incorporating the existing vegetation into the site design. Some of the considerations which should be embodied when matching a home to a site are as follow:

- Hillside characteristics help set the tone for Colorado Springs' image and desirability as a place to live.
- The streetscape within hillside developments should contain elements which reflect the City's natural hillside setting.
- Maintaining the natural environment preserves wildlife habitat and migration corridors.
- Native vegetation is suited for low water landscaping since it has evolved to be drought tolerant and can exist on the historic natural levels of precipitation.
- Minimizing disturbance of existing plants prevents erosion and sedimentation problems.
- Mature natural hillside flora has value which cannot be replaced.
- Existing vegetation provides a privacy screen between neighbors and between the house and the street.
- Vegetation which is preserved, offers a real dollar value in landscaping already in place and in improving a homes curb appeal for sales.

There are bound to be conflicting ideas in attempting to reach a balance between the need to preserve natural vegetation and the desires or requirements of contractors and homeowners. Below are some conflicts which have been identified as inherent to building on vegetated lots.

- Foundation excavation and over-digs in poor soil conditions require the removal of all vegetation within the dig area.
- Vegetation must be removed for cuts and fills.
- Often, homeowners want to site houses in locations which are covered with significant vegetation.
- Homeowners desire level lawns, patios, and recreation areas.

- The demand for basement walkouts exceeds the supply of lots which can naturally accommodate this type of house. This results in houses with forced walkout designs and unnecessary cuts.
- Frequently, houses are sited on the highest point of a lot to achieve views without consideration of their effect on existing vegetation and off-site visual impacts.
- Vegetation is removed to improve views.
- It is easier to construct houses with overgrading versus incorporating existing vegetation into site design.
- Vegetation is removed to reduce fire hazards and to limit ladder fuels.
- Vegetation is removed with the installation of utility lines.
- There is a perception that natural vegetation does not have as much a value as formal landscaping.

Design Objectives - Working with Vegetation

One of the main objectives in protecting the existing vegetation of a site is to screen the bulk of the house. Although a house can be beautiful in its own right, the natural characteristics of a lot can only be maintained if the home is designed to complement the site rather than the other way around. In designing this home, architects, builders and homeowners should assimilate the structure to the site it is placed on.

The following design objectives should be addressed in the placement of houses on hillside lots:

- Houses should be sited to incorporate existing vegetation into the design to preserve the natural hillside image and character of the area.
- Emphasis should be placed upon preserving the vegetation in the front yard area to project a hillside appearance from the street.
- Existing vegetation should be used to soften structural mass and blend the house into the natural setting. A two or three level home should have most of the first floor screened by Scrub Oak and trees. In this way, the house almost appears to grow from the lot like the trees. Small breaks in the vegetation can enhance this image as seen from the street.
- The amount of vegetation which can be removed depends on how much is existing in the first place. Lots which are heavily treed are bound to lose some. Sites with limited natural vegetation may have to be designed with extra care to retain as much as possible.
- Cuts and fills should be designed to limit their impact upon areas containing Scrub Oak, Mountain Mahogany and pine trees.

- Lawn, patio and formal recreation areas should be limited if their construction will require the removal of significant vegetation or the creation of cut and fill areas.
- Natural slope and vegetation should be incorporated in a manner which preserves the hillside characteristics.
- It is recognized that selective removal of natural vegetation is necessary to reduce the risk of wildfires.
- Utility line installation should be designed to avoid the removal of natural vegetation where possible.
- On heavily vegetated lots where clearing is required, emphasis should be placed on removing smaller and diseased vegetation and saving larger, healthier growth.
- If decks are located close to trees, post and beam systems should be used rather than foundations, as this is far less destructive to the roots.
- When siting a house for views, primary consideration should be given to the preservation of existing vegetation.
- The optimum coverage for a lot in terms of healthy trees, minimized fire hazard, and maximum real estate value, is approximately 140 mature trees per acre. In the field, this has the appearance of a moderately forested lot with trees just touching each other.

Vegetation Review Requirements

The following review standards are to be used by the Zoning Office in evaluating the impact of house placement and construction upon existing vegetation:

- Site plans should reflect any vegetation which is to be removed, replaced or relocated.
- All vegetation within 30' of the house perimeter and within the house structure should be shown in detail. Less detail is needed for vegetation beyond 30'.
- Show the anticipated location of utility service lines. When possible, these lines should be run under, or immediately adjacent to, the driveway location. If utilities are to be run on another part of the lot, the vegetation must be protected by using narrow trenches, laying lines to avoid significant trees and shrubs, and through other mitigation methods such as augering.
- Vegetation within 10' of the structure (with the exception of the deck area) may be removed if necessary to comply with the Fuels Management Ordinance.

- No vegetation is to be removed within Preservation Areas except to comply with the Fuels Management Ordinance.
- Trees over 12" in diameter are considered irreplaceable and should not be removed from a lot unless there is no other location for the house.

WHY SAVE SCRUB OAK?

One of our most durable and hardy native shrubs, Gambel's Oak or Scrub Oak has evolved to nearly a perfect fit with the Colorado Springs environment. With a northern range limit around the Denver/Boulder area, Gambel's Oak is the predominate woody deciduous shrub of the Pikes Peak region. There are at least four forms of Scrub Oak that grow here naturally. These range from highly branched medium sized shrubs with extensive suckering to single stemmed trees of 30 feet or more. All forms tend to grow in thickets with intervening open areas.

Scrub Oak is a slow growing shrub that does not take well to transplanting. Once established, however, the plant is a survivor. A deep and expansive root system is the key to Scrub Oak's success. A year old seedling may have no more than four leaves, but can have a 12" root. In the winter, the water absorbing portion of the roots are shed and all cell activities cease. As a result, no energy or moisture is lost to the soil. This, however, leads to an intolerance of excess moisture in the dormant seasons. In the spring time, Scrub Oak is one of the few plants that initiates new growth before it leafs out. This is one way that the Oak survives late Spring freezes while other less robust plants may die.

Fall is the period for reproduction and preparation for the winter. While the Scrub Oak's acorns normally provide food for a wealth of animals and insects, in certain years the acorn production may be turned completely off. As a result, dependent animal populations go hungry and neighboring subdivisions see an influx of bears and other animals searching for alternate food sources. The year following a shutdown is usually an acorn bonanza. In this way the Scrub Oak plants insure that there will be plenty of acorns for reproduction and not as many consumers to eat them.

The thicket growth nature appears to benefit Gambel's Oak in several ways. First, when the leaves fall during late autumn, they tend to be captured around the base of the Scrub Oak. This creates a natural mulch which leads to water retention and improved soils. In the winter, the thickets act as snow fences, capturing the snow which blows off the grassy gaps between stands. In effect, the Scrub Oak is harvesting the moisture from the snow

For a low maintenance, self-sustaining landscape plant, Scrub Oak is hard to beat. It offers free shelter and food for wildlife and it provides a natural privacy screen for the house. At \$30 or more for a new five gallon container, the Scrub Oak that you save can add up to thousands of dollars in landscaping not needed. And as can be appreciated by anyone who has ever endured the months it take to build a new home, with Scrub Oak, your landscape is already in.

Architectural Features

While there is no one style that defines Colorado Springs, there are many building elements that make sense in the hillsides from both an aesthetic and a practical perspective. Quality design in a home makes it not only more livable, safer and attractive, it can add greatly to the expected resale value. Even though there are few architectural features that are required by the Hillside Ordinance, there are many aspects of home design which are greatly encouraged. A positive style element can make the difference in changing a borderline denial into an approved plan. If, for example, a home is placed out on a ridge further than necessity requires, a low profile design with a highly articulated roof line might make the difference in getting the plan permitted. Although it is not the intent of the City to regulate individual tastes, it is ultimately impossible to separate a homes design from the characteristics of the lot on which it is located.

Design Objectives - Architectural

The following architectural objectives are encouraged when designing a home for the hillside areas.

- Mass/Height - Homes should not appear overly prominent or obtrusive as seen from the street, neighboring properties or off-site. One story houses are encouraged, particularly homes which are placed close to the street or which have locations which are highly visible from off-site vantage points.
- Use of Natural Appearing Materials - The following building materials are encouraged; unpainted wood siding, exposed wood structural members, logs, bricks, stucco, and natural stone masonry. Roof shingles or tiles should consist of natural colored metals, class C or better wood shakes, concrete, fiberglass, asphalt or clay. For all of these materials, dark or earthtone colors are encouraged. If a hillside home is to blend in to the site, it should limit the use of large expanses of glass, exterior plastic, vinyl siding or any reflective or shiny materials.
- Color - Color schemes for the both the building and roof should blend in with the natural landscape of earth toned soils, bedrock, and natural woodland, brush, and grassland vegetative growth. High contrast or bright colors should be avoided. White or other similarly bright colored homes can be seen from many miles off site and can make a house appear much larger or bulkier than it really is.
- Building Form - Building form should be planned to enhance to the site's natural features. The form, mass, profile, and architectural features of the structure should be designed to blend with the natural terrain and preserve the undulating profile of the hillside. Positive ratings are offered for avoidance of multi-story structures on ridgelines and on all sites lower profile homes are encouraged. Split level designs and stepped foundations which mirror the slope of a hillside are encouraged. Structures should be cut into the hillside to reduce visual bulk by being fully or partially below grade.

- Long unbroken roof lines should be avoided. Instead, roofs should be broken into smaller components to reflect the irregular natural hillside patterns. The roof should be oriented in the same direction of the slope contour and large gable ends on downhill elevations and excessive cantilevers or overhangs should be avoided.
- Use varied and contrasting horizontal and vertical building planes to create various light, shade, and shadow patterns. Avoid large single form structures.
- Avoid large expanses of a wall in a single plane on downhill elevations.
- Detached parts of dwelling, such as the garage, are encouraged, when appropriate.
- Avoid using overhanging decks or decks elevated on poles.

Construction Practices

The best possible landscaping plan for a hillside house is the one that was there before the house was built. Typically, when a homeowner moves into a newly constructed home, one of the first things to do is to start landscaping. This job can cost many thousands of dollars and requires years of growth and maintenance to bring the yard to maturity. Even when finished, the new landscaping may never be as well suited for the local environment as the indigenous trees and shrubs. It makes sense, therefore, for the City, developers, builders and homeowners to work to save as much of the initial site as they can.

"A study by the U.S. Forestry Department showed that well placed trees can increase the value of a house by as much as 20%."

From Good Design Pays, Grant W. Reid, ASLA Colorado Green, Winter 1995, vol. 10. No. 4.

Saving vegetation on a site takes more than bulldozing around a tree rather than through it. Assuming that the house designer and builder have incorporated the themes expressed in this manual, a plan will have been developed where the house fits the site and the surrounding vegetation will have been preserved. Now it is time to put all of the planning into action. The greatest disturbance to a site occurs during grubbing, excavation and home construction. A little extra care during this period will make the difference between a house that appears to belong on a lot and one that seems as if it were merely dropped from the sky.

Building with Care

The probability that existing trees and shrubs will survive in the face of construction project will be the highest if they are left alone. This means keeping equipment, grading activity, dirt and materials away from the vegetation to be saved. The general contractor should inform the subcontractors of the note regarding the importance of saving vegetation. On some sites contractors have imposed fines for destroying vegetation that was supposed to be saved. Following are construction practices that should be followed at every job site.

- Before grubbing or clearing a lot, the area to be preserved should be marked with ribbons or roped off for protection.
- Snow fencing should be placed around trees a distance equal to the size of the individual tree's drip zone. This area can be calculated by measuring the diameter of the tree at breast height. Each inch of diameter is equal to one foot of drip zone. For instance, a 12" diameter tree will require a 12' wide drip zone. Nothing should be allowed within this area.
- Avoid compacting the soil over a trees root zone. By driving or paving over roots the tree can be suffocated as it loses crucial air spaces in the soil. A tree is most vulnerable to compacted soils during soil drying periods, usually a day or two after heavy rain or irrigation.

- If it is necessary to fill over the root zone, compacted soils can be avoided by sandwiching fabric, rocks and more fabric under the area to be filled.
- Fill placed directly on the roots may not exceed a maximum of 6" in depth.
- If fill creates a tree well or depression around a tree or shrubs, this area needs to be drained so that the vegetation is not drowned by the pooling of rainfall or irrigation.

If a tree's roots must be cut, the branches should be trimmed by an amount equal to the percent of roots that were lost. Roots should be pruned cleanly prior to digging and not ripped off by heavy equipment. Cutting more than 30% of the roots endangers the health of the tree, and over 40% affects the tree's stability.

- Utility trenches near trees should be avoided. If a line must be close to a tree, tunneling or augering should be used.
- It is better to tie branches back from a house in order to erect scaffolding than it is to cut them.
- Broken branches and trunk scrapes should be repaired promptly.
- Do not clean or dispose of paints, thinners, concrete or any other chemicals near trees. Spread heavy tarps over roots if sheetrock is to be cut or concrete is to be mixed in the area. These materials can change the pH of the soil, weakening or even killing the tree.

Final Landscaping

Bluegrass lawns are expensive. They consume your time in maintenance, they have adverse impacts on the environment and they are expensive to water. In Colorado Springs we put 70% of our summer water on our landscaping and we use ten times as many pesticides and herbicides per acre as we do for farmland. The fact is, we live in a semi-arid climate. Although we naturally receive an average rainfall of 15" of each year, we put two or three times that much on our lawns.

Running a gasoline-powered lawn mower for an hour emits the same amount of air pollution as driving a car for 350 miles.

In some places, sodded lawns make sense. No one would begrudge homeowners the use of small areas of grass. However, it is only sensible to landscape as much of our yards as possible with plants that have lower water needs. The good news is that there are a great many alternative water consuming plants to choose from.

Designing with Nature

A landscape plan for a hillside home does not have to be a complicated undertaking. Residential landscape planning can be done by anyone from horticulturists to novices who simply have the desire to work in the yard. The tools are simple and the costs of the plants and raw materials are within the reach of everyone. It is important to keep in mind that a homes landscape will evolve over years and it is not necessary to complete the entire project in the first summer.

There are essentially three steps to a healthy yard; planning, preparing and planting. The first step is, perhaps, the most important. The time spent on preparing a good hillside landscape plan will pay off for years to come and in the resale value of the home. Colorado Springs has a natural environment that is tough on plants. With limited rain, unrelenting high altitude sunshine and strong seasonal changes, many plant types that work well in other areas of the country become a maintenance nuisance or even die if planted here. Plants should be selected carefully to ensure that they can survive with minimal water and maintenance once established. Soils preparation and planting are when you take your good ideas and make them work.

Planning

Any good plan needs to be written down. On a piece of graph paper or any scaled plan which shows the location of the house you should start by defining where things are. Chart the location of the existing vegetation and note the environmental factors or stresses which allowed these plants to live there. Consider the amount of sunshine exposure which is received in a given location and highlight areas which receive the bulk of the drainage. Indicate any other microclimate factors that will affect the types of plants to be selected. On this plan, show areas that you might have a special interest in adding your own individual touches. You might, for instance, wish to plant an evergreen tree to offer privacy in front of a bathroom window or perhaps you want to establish an informal flower garden. This is the time to set the

landscaping tone for the life of the house. In developing your plan keep the following factors in mind:

- Sizing - Plants have widely differing growth rates and ultimate spread size. On your plan you should draw plant types at their mature size. Try not to overly bunch trees or they will end up competing with each other for water and sunshine. While some trees such as Aspen and Douglas Fir like company, others such as Ponderosa Pines need room to expand. Place trees far enough away from the house so that at their full size they will not create a fire hazard or make the house appear imposed upon.
- Water - You should strive to use plants that have the same water needs as those which grow naturally in the area. In most cases this means using low water plants or xeriscaping. There are a wide variety of low water plants available which have the same attributes of their thirstier cousins, but come with far fewer problems. A listing of low water trees, shrubs, perennials and other vegetation which thrives in the Colorado Springs environment is included in Appendix F. of this manual.
- Irrigation - If an irrigation system is to be used, it should be planned to provide zone watering or differing areas of intensity depending on the needs of the located there. Group plants with like water needs together. Heavier irrigation, for instance, might be needed in turf areas, while a low output bubble system might work for flowering shrubs. Certain types of plants, such as pre-existing Scrub Oak, need no supplemental water.
- Sun - Plants have individualized sunshine requirements. Your local plant nursery can help you to select the best types of vegetation for the given conditions. Direct sun tends to dry out exposed soils through evaporation and increased heat. A vegetative covering in these areas will keep more moisture in the soil. In addition, trees and large shrubs can be located so that they work as a home energy saving system. Deciduous trees growing in front of south facing windows will block the hot summer sun with their leaves. In the winter, however, the sun's rays will be able to pass the leafless trees and will warm the house.
- Slope - Sloped areas tend to lose water by increased run-off. In these areas, it may make sense to plant ground covers which are especially good at holding soils together and which have reduced water needs. Another option is to install a natural rock garden.
- Compatibility - The overall objective of the plan should be to concentrate plants with similar needs in areas where the optimum conditions exist. If you are going to irrigate a small area of lawn, then this is not a good location for Pinon Pine trees. The two plant types have greatly different water requirements and constant sprinkling may cause the Pinon's roots to rot. Keep plants with similar water needs together and those with unlike needs apart. Plants can also be compatible in the way they work together. Certain perennials work well in the shady understories of trees where they are protected from the direct sun and wind. In return, these plants help keep the ground around the trees roots from drying out.

Preparation

There are two essential tasks that need to be completed in order to prepare bare ground for planting. You should shape the surface and amend the soils to consist of a high level of organic material. The first step, shaping, is the final procedure in your overall grading plan. Keeping in mind the points covered previously in this manual, your final grading should be done with an eye toward protecting the existing vegetation. Shaping the previously disturbed areas, however, is a necessary step in finalizing the fit of the house on the site. A lot should be shaped to achieve the following:

- Do not disturb any areas other than those already impacted by excavation and house construction.
- Hand groom excessive (over 6") accumulated soils off the roots of Scrub Oak or trees.
- Finalize the lot drainage so that water is carried away from the house foundation. Water which is allowed to permeate downward along the foundation can affect the sub-surface soil conditions, possibly leading to damage of your home.
- Round sharp edges of cuts and fills so that the area to be planted will easily blend into the surrounding terrain.
- Provide depressions and catch basins so that snow and rainwater can percolate into the ground rather than run-off unimpeded.
- Design swales to run across flatter areas (between 2% and 6% grade) rather than down steep pitches. This slows the velocity of the drainage and increases the amount of water filtered into the ground.
- Direct roof and hard surface runoff into catch basins.
- Install an in-ground water cistern. Provide outlet holes to allow leeching of the collected water into the surrounding ground.

The next step in preparing for planting is to amend the soils. This takes place in several forms; modifying the structure, augmenting with organic additives, and mulching. Some considerations in taking these approaches are as follow:

- Sandy soils easily lose moisture and should have a layer of topsoil and composted manure thoroughly mixed into the top 6" of natural soil. This encourages deep root growth and reduces the need for constant watering.
- A soil heavy in clay lacks air spaces and should be amended with coarser sands and organic materials. The ideal mix has as much as 50% pore spaces and a soil balanced with sand, silt, and clay.

- Organic composts can be made of grass clippings, kitchen wastes (organic materials only), leaves, manure, peat, pine needles, sawdust and straw. This compost material can be turned into the soils at any stage of a yards development.
- A top layer of wood or bark mulch can be spread in landscaped areas to improve the water retention and to add additional organic material to the soil. Mulches should be between 3" and 6" deep to inhibit weed growth. In general, mulches should be applied soon after planting to encourage better root growth and to delay late season damage due to freezing.
- Use fabrics which allow water and air infiltration instead of plastic under mulches. Plastic is impervious to water.
- Avoid rock mulches. These offer no organic supplements, are not as effective in preventing weed growth, and generate unhealthy levels of heat to your plants. Perhaps most importantly, rocks make it nearly impossible to remove weeds.

Planting

The final step, planting, may go on for years. It is better to take time in selecting the most appropriate plants for a site than it is to provide an instant landscape cover. The central idea when planting in the hillsides is to develop a low maintenance, low water requiring vegetative cover. Once the major themes such as screening or wildflower gardens have been established, the homeowner can concentrate on infill planting and maintenance.

A free street tree may be available for your new home through the City Forestry Office. For more information call 578-6698.

General maintenance of a xeriscaped yard is far simpler than for bluegrass sod. Trees and shrubs can be trimmed for optimum growth and shape, and occasional fertilizing and weeding is needed. For the most part, however, xeriscaping takes very low maintenance. In some areas such as wildflower gardens, no weeding is needed. Although any plant needs an initial season or two of watering to get established, once they take, the supplemental water needs drop drastically.

The possibilities are endless when landscaping a home in the hillside. There are plants that encourage wildlife, and plants which offer an abundance of year round color. Some plantings are done to create privacy while others are intended to highlight the architecture of the home. With some imagination, planning and a shovel, it is possible to create a house that fits the hillsides. For further information regarding the selection, care and maintenance of your landscaping, you can contact the following:

- Colorado Department of Agriculture Division of Plant Industry. Pesticide laws and information. (303) 239-4140.

- Colorado Nurseryman's' Association. Publishes the Rocky Mountain Plant Guide which is available at most local nurseries.
- Colorado Springs Parks and Recreation Forestry Division. 578-6698.
- Colorado State Forest Service. Specializes in trees and shrubs.
- Colorado State University Cooperative Extension. 636-8920.
- El Paso County Extension Service. 520-6450
- El Paso County Parks. 520-6375.
- U.S. Forest Service. Pikes Peak Ranger District. 636-1602.
- Xeriscape Task Force and the City Water Resources Department. 448-8717.

Living with Wildlife

When we put a house in the hillside, we are building in nature's back yard. The deer, rabbits, squirrels and birds inhabited the forests and fields long before homes and residential neighborhoods showed up. Animals do not recognize property boundaries. They live where there is habitat, food and water. Normally these are provided for by nature. When subdivisions are built where the woods once were, the animals will continue to live near by. If the necessities for life are provided around our houses, wild animals and people will intermingle. This creates a conflict and an opportunity.

The conflict arises because humans and wild animals do not necessarily make good neighbors. If pets and their food are left outside, these might prove to be an irresistible attraction to hungry bears or mountain lions. Bears will eat nearly anything including garbage, pet food and seeds and suet from bird feeders. Mountain lions and coyotes have been known to kill pets, and in rare instances, attack small children. If wildlife is being fed by homeowners, either by purposely or inadvertently leaving out pet food, the animals become attracted to our homes. Once animals lose their natural tendency to avoid people, a dangerous situation is created. Ways to prevent potentially dangerous interactions are as follows:

- Do not feed or keep your pets outside. At night time in particular, pets are subject to attacks by mountain lions, coyotes and foxes. Dogs which run wild may pack together and kill deer.
- Clean the grease off BBQ grills and store them inside.
- Hang bird feeders and suet between trees rather than off decks. A bear will climb on a deck or tear it down to get to this tasty snack.
- Keep garbage cans out of the reach of animals and periodically clean them.
- Do not feed deer or other wildlife. Not only is deer feeding illegal in Colorado, but deer coming up to your house may draw mountain lions.
- Be aware that some types of plantings are more attractive to animals than others. Fruit trees and certain junipers may end up as deer food.
- Many animals such as skunks, raccoons and prairie dogs which are cute in the wild become pests when they move into your attic or window wells. For further information dealing with unwanted wildlife contact Division of Wildlife at 473-2945.

By living in the hillsides, it is possible to observe animals in their natural state. Residential developments in Colorado Springs are planned to preserve animal migration corridors along heavily forested areas and drainage ways. These connections allow deer and other animals to travel relatively undisturbed from one forest stand to another and to protect the quality of our waterways and environment. Since we are in a sense inviting wild animals into our communities, however, it is doubly important that we observe the safety precautions noted above. Once we have

accepted the fact that man and nature can live side by side, there are many things we can do to make this condition more enjoyable.

- Learn more about the local wildlife by reading about it or visiting with any of the numerous local information agencies such as the Colorado Springs Parks and Recreation Department or the local Division of Wildlife office.
- Attract birds by providing bird houses, feeders and water.
- Plant grasses, shrubs and trees which provide food and shelter for birds and small animals.
- If you see deer or other large animals in residential areas, leave them alone unless there is an immediate threat to your safety. Tranquilizing or capturing animals can be life threatening to the animal. Even if the animal is not immediately affected, the Division of Wildlife has adopted a policy that any bear trapped more than once gets destroyed. In most situations, large animals will move away from people and houses if left alone.
- Watch and enjoy. Through quiet observation, it is possible to find animals in any type of ecosystem whether it is a field or the woods. You can increase your chances of seeing wildlife by watching at dusk and dawn. Wildlife is most numerous along the forest's edges. Where Scrub Oak changes to grasses, and shrubs give way to trees, these are the places where the most animal interactions can be seen.

Wildfire Risk Management

OVERVIEW

Wildfire risk reduction techniques include monitored smoke alarm systems, sprinkler systems, fire resistant roofing materials which are rated Class C or higher, and fuels management measures. The City of Colorado Springs has adopted amendments to the City's Hillside Overlay Zone and Fire Prevention Code relating to fire safety measures in the Hillside areas.

Within the Hillside fuel management measures shall be utilized within the safety zone of applicable new home construction. Fuels management is defined as the modification of natural vegetation within the safety zone to protect structures from approaching wildfire, as well as to reduce the potential for structure fire from spreading to the wildland. The safety zone is defined as the area within thirty (30) feet of the main structure, not to extend beyond the property line.

It is the City's desire to provide an environment safe from wildfire while maintaining the aesthetics qualities of the native hillside.

CRITERIA

Using the following guidelines, roof materials, system requirements, and fuels management requirements shall be determined by the CSFD and City Zoning Administration for each individual lot, as part of the building permit approval process. The following measures are required.

Fuels Management:

All lots within the Hillside Overlay zone illustrated on development plans approved on or after April 1, 1993, shall be subject to the following fuels management requirements:

- Brush patches or clusters may be left in the safety zone, but shall be separated by clear areas of ten (10) feet or more of noncombustible materials or grass mown to not more than four (4) inches in height.
- No brush shall be allowed within ten (10) feet of the main structure. Exception: When approved by the Fire Chief, small brush patches, not exceeding one hundred (100) square feet and fifteen (15) lineal feet in any direction, may be allowed to intrude, if the structure has fire-resistant siding.
- Large trees shall not have overlapping limbs and shall be pruned of dead limbs to a height of ten (10) feet above the ground. Tree clusters may be allowed if sufficient clear area is provided.

- Tree branches shall not extend over or under the roof eaves and shall not be within fifteen (15) feet of a wood burning appliance chimney.

Fire Protection Systems:

A monitored smoke alarm system or a sprinkler system is required for any new hillside zoned home built after April 1, 1993, id located on a lot which lies beyond one-thousand (1,000) feet along a cul-de-sac or if located on roadways with grades in excess of ten (10) percent if said roadways are the only vehicular points of access to the home.

Roofing Materials:

After January 1, 2003, a minimum of a Class A roof covering (excluding solid wood roofing products) shall be installed on all Residential Occupancies and a minimum Class B roof covering shall be installed on all remaining occupancies (Not to replace Class A where already required by Table 15-A) when an application is made for a roofing or re-roofing building permit within the limits of the City of Colorado Springs, Colorado.

APPLICATION TO NEW DEVELOPMENT

Fuels management measures shall be utilized within the safety zone of new homes upon lots within the Hillside Overlay Zone illustrated on development plan approved on or after April 1, 1993. In addition, effective April 1, 1993, all new subdivision plats and development plans for Hillside zoned projects shall include a statement of the requirement for fuels management, minimum Class A roofing, and, if applicable, smoke alarm or sprinkler systems. See Section E., Wildfire Risk Mitigation, of the Hillside Overlay Zone Ordinance, contained within Appendix A. for the specific development plan and subdivision plat note language and statements.

APPLICATION TO EXISTING DEVELOPMENT

Fuels management and fire protection systems are not required for homes built prior to April 1, 1993. However, after January 1, 2003 all new roofing (and re-roofing greater than 25% of total roof area) applications must use Class A rated materials.

COMPLIANCE

In addition to the above criteria, the following shall be undertaken to insure compliance:

The Development Services Department shall ensure that the notes, as required by Section E., Wildfire Risk Mitigation, of the Hillside Overlay Zone Ordinance are

included on all applicable development plans and subdivision plats. The Zoning Administration office shall ensure that the proper notes are included on all applicable Hillside Site / Lot Grading Plans. In addition, the Zoning Office shall inform the applicant of the required fuels management measures for each individual lot at time of HSS/LGP review. The Zoning office will identify the structures requiring Class C roofing materials and fire protection system installation and mark the HSS/LGP plan accordingly.

The Fire Department will review all applicable building plans for homes required to install fire protection systems. The Department will review all plans, determine system requirements and issue appropriate permits.

The Regional Building Department will review all applicable plans for roofing and reroofing applications to insure that Class A materials will be used

INSPECTIONS

The City Zoning Administration office will follow-up and conduct inspections to determine compliance with the fuels management requirements and other City Code provisions. Most sites will be visited twice after construction commences.

The initial fuels management inspection will be scheduled to occur prior to the Regional Building Department's framing inspection. It shall be the responsibility of the builder to request the inspection. The primary propose of the initial inspection will be to determine compliance and to prescribe mitigation or remedial actions which can be taken, at an early stage, to correct necessary violations. A HSS/LGP plan inspection will occur at the same time. Required corrective actions will be forwarded to the applicant and compliance expected by final inspection.

The final inspection will be scheduled to occur shortly after construction has been completed and prior to the Building Department's final inspection. Again, it shall be responsibility of the builder to request the inspection. The primary propose of the final inspection will be to a determination of compliance and the prescription of additional mitigation actions which may be necessary. A final HSS/LGP plan inspection will also occur at this time.

For homes that require a monitoring smoke alarm system or a sprinkler system. The Colorado Springs Fire Department shall conduct inspections. A visual piping inspection must be secured through the Fire Department prior to the framing inspection. Final inspection and approval of the system must be secured through the Fire Department prior to final inspection by the Building Department and/or occupancy of the residence."

EVALUATION LETTER

The City Zoning Administration Office will provide an evaluation letter to all applicants of hillside development. In addition to other information the letter will include a fuels management requirements compliance evaluation. See sample letter found in the Appendix G.

Grading & Removal of Native Vegetation From Developed Lots

Whether you have built from scratch or whether you have purchased an already existing hillside home, there are certain rules which govern your ability to change the site. If you live in an area covered by the City's hillside overlay zone, City approval may have to be obtained before you build, cut vegetation or grade. The intent of the City's hillside ordinance is to preserve the natural characteristics that make the hillsides a special place. Before making any exterior changes to your home or site, you should address the following concerns:

- * All house or deck additions must be approved by the Zoning Administration Office prior to any work being done. As with new home construction, additions should be designed to save the existing vegetation and to minimize cuts and fills. A checklist describing the required plan submittal information can be obtained from the Zoning Office.
- * Site changes such as retaining walls must be approved by the Zoning Administration Office. Such changes may be denied if they do not comply with the purpose and intent of the Hillside Ordinance. Retaining walls over four feet high must be designed by a licensed engineer and require a building permit.
- * Normal maintenance and treatment of your yard's landscape cover may be conducted without any City approvals. If, for example, a section of Scrub Oak has died, it is acceptable to trim back the dead plants in order reduce the fire hazard and to give the new growth room to grow. It is not acceptable to remove Scrub Oak or trees to increase the size of grass play areas.
- * If vegetation is removed from a yard in violation of the Hillside Ordinance, an enforcement case will be opened by the Zoning Administration office and penalties will be imposed upon the homeowner.

Vegetation within ten feet of the home may be removed without City review if necessary to comply with fire safety procedures.

Appendix A - Copies of Hillside Overlay Zone Ordinances and Resolutions

(ATTACH SIGNED & CERTIFIED COPIES OF HS ORDINANCES & RESOLUTION)

Appendix B - Hillside Height Phase-In Policy

(Phase in Period expired June, 1997. All Code provisions apply to hillside development proposals.)

Appendix C - Hillside Site / Lot Grading Plan Checklist

HILLSIDE SITE / LOT GRADING PLAN SUBMITTAL CHECKLIST

This application form sets forth the content and format of a Hillside Site / Lot Grading Plan. Plans will be complete when all of the applicable information has been provided. An incomplete or incorrect submittal will cause a delay in review.

All Plans shall be drawn at the minimum scale of One inch is equal to Twenty feet (1" = 20') and minimum contour interval of two (2) feet. The contour information shall be based upon a survey or "FIMS" data and shall meet "National Map Accuracy Standards".

Site Address: _____ Applicant:

Telephone: _____

Applicant's Certification Statement: I, _____, as Applicant and duly representative of the owner, hereby certify that the information included upon the attached Hillside Site / Lot Grading Plan is true and accurate; and that the development of the site will occur in accordance with the Plan.

Signature Date

Approval Statement: The attached Hillside Site / Lot Grading Plan has been reviewed by the City Zoning Administration office and finds that the plan is hereby:

APPROVED, and the Applicant is permitted to proceed to secure other required permits.

APPROVED, SUBJECT TO the following conditions, and the Applicant is permitted to proceed to secure other required permits:

DENIED, based upon the following reasons:

I.) Total square footage of all existing & proposed structures

J.) Calculated maximum height of all existing, proposed, and/or expanded structures,

K.) The following applicable "Hillside Protection Notes":

Note 1: No disturbance, grading or significant natural, features and vegetation removal will occur beyond the "Limit of Disturbance" line, as shown on this plan.

Note 2: The "Limit of Disturbance" line shall be delineated during construction with flags, roping and/or 4' tall orange construction fencing.

10.) Property lines location and dimensions;

The Hillside Site / Lot Grading Plan shall include the following information:

APPLICANT REVIEWER

11.) All existing and proposed public and private easements, "no build" areas, common areas, and preservation areas, indicating their type, location and dimensions;

12.) Distance of all existing, new, and/or expansions of structures, including retaining walls and fences, to property lines;

13.) Location and dimensions of predetermined building envelopes, as shown on the Hillside Development Plan, if applicable;

14.) Location and dimensions of the area designated as the "Limit of Disturbance";

15.) Location, dimensions, type, height of existing & proposed structures;

16.) Location, dimensions, type, height, of all existing and proposed retaining walls;

17.) Location, grade, surface, curb cut, and size of driveway(s);

18.) Location, name, and size of all adjacent street and alley right-of-ways;

19.) Location and extent of all existing and proposed sidewalk, walkway, street and alley improvements to center line, including: paved surfaces, curb and gutter, curb cuts and ramps, and other improvements;

20.) Location and type of all private proposed utility service lines, including: water, sewer, electricity, gas, telephone and catv;

21.) Location and type of all existing public utilities, including: water, sewer, electricity, gas, telephone and catv equipment and systems;

22.) Location, type, and general information regarding existing and proposed drainage patterns, and the improvements and methods to be used to channel flows into the public system;

23.) Indicate existing building grade and proposed finished grade topography at a minimum of two (2) feet contour intervals, locate an existing permanent fixed benchmark and a visual foundation benchmark with elevations identified;

24.) Illustrate the building and finished grade adjacent to each of the major corners.

25.) Indicate the location, size, and type of all existing significant natural features, including: excessive slopes of 25% or greater, ridgelines, bluffs, rock formations, vegetation; natural

streams and drainageways, and limiting natural and geologic condition;

26.) Indicate all proposed significant natural features that will be protected during construction, preserved after construction, and all of the natural features that will be removed;

The Hillside Site / Lot Grading Plan shall include the following information:

APPLICANT REVIEWER

27.) Indicate the location, size, and type of all proposed new landscaping;

28.) Indicate the temporary and permanent methods to be used to stabilize and prevent the erosion of soils;

29.) Indicate the area in which all equipment and material, including soil, will be stored and stockpiled;

30.) For Plan amendments, clearly delineate and indicate the area proposed for amendment by highlighting and/or outlining the changes.

A Hillside Building Elevation Drawing shall be attached as part of the Plan and shall contain the following information:

APPLICANT REVIEWER

1.) The structure's front, rear, right, and left side profiles shall be shown. The preferred drawing scale should be 1/4 inch is equal to one foot.

2.) Identify the major corners on each side profile. From the site plan transfer, mark, and record the elevation where the structure intersects the building grade surface.

3.) Show the building (existing)grade and finished grades for each side profile with a horizontal line.

4.) From the major corners building grade intersection mark, measure vertically thirty-five (35) for a sloped roof or thirty (30) scaled feet for a flat roof and identify and mark the maximum hillside building height. Connect the maximum hillside building height control points for each side profile with a horizontal line.

Applicant's additional information, notes, and comments:

Appendix D - Hillside Site / Lot Grading Plan Checklist for Decks, Additions, Vegetation or Grading Modifications

HILLSIDE SITE/LOT GRADING PLAN SUBMITTAL CHECKLIST FOR DECKS, SMALL ADDITIONS, VEGETATION OR GRADING MODIFICATIONS

This application form sets forth the content and format of a Hillside Site/Lot Grading Plan. Plans will be complete when all of the applicable information has been provided. An incomplete or incorrect submittal will cause a delay in review.

All Plans shall be drawn at the minimum scale of One inch is equal to Twenty feet (1" = 20') and minimum contour interval of two (2) feet. The contour information shall be based upon a survey or "FIMS" data and shall meet "National Map Accuracy Standards".

Site Address: _____ Applicant:

Telephone: _____

Applicant's Certification Statement: I, _____, as Applicant and duly representative of the owner, hereby certify that the information included upon the attached Hillside Site / Lot Grading Plan is true and accurate; and that the development of the site will occur in accordance with the Plan.

Signature Date

Approval Statement: The attached Hillside Site / Lot Grading Plan has been reviewed by the City Zoning Administration office and finds that the plan is hereby:

APPROVED, and the Applicant is permitted to proceed to secure other required permits.

APPROVED, SUBJECT TO the following conditions, and the Applicant is permitted to proceed to secure other required permits:

DENIED, based upon the following reasons:

K.) The following applicable "Hillside Protection Notes":

Note 1: No disturbance, grading or significant natural, features and vegetation removal will occur beyond the "Limit of Disturbance" line, as shown on this plan.

Note 2: The "Limit of Disturbance" line shall be delineated during construction with flags, roping and/or 4' tall orange construction fencing.

7.) Property lines location and dimensions;

8.) All existing and proposed public and private easements, "no build" areas, common areas, and preservation areas, indicating their type, location and dimensions;

9.) Distance of all existing, new, and/or expansions of structures, including retaining walls and fences, to property lines;

10.) Location and dimensions of predetermined building envelopes, as shown on the Hillside Development Plan, if applicable;

11.) Location, dimensions, type, height of existing & proposed structures;

The Hillside Site / Lot Grading Plan shall include the following information:

APPLICANT REVIEWER

12.) Location and dimensions of the area designated as the "Limit of Disturbance";

13.) Illustrate the building and finished grade adjacent to each of the major corners.

14.) Indicate the location, size, and type of all existing significant natural features, including: excessive slopes of 25% or greater, ridgelines, bluffs, rock formations, vegetation; natural streams and drainageways, and limiting natural and geologic condition;

15.) Indicate all proposed significant natural features that will be protected during construction, preserved after construction, and all of the natural features that will be removed;

16.) For Plan amendments, clearly delineate and indicate the area proposed for amendment by highlighting and/or outlining the changes.

A Hillside Building Elevation Drawing shall be attached as part of the Plan and shall contain the following information:

APPLICANT REVIEWER

1.) The structure's front, rear, right, and left side profiles shall be shown. The preferred drawing scale should be 1/4 inch is equal to one foot.

2.) Identify the major corners on each side profile. From the site plan transfer, mark, and record the elevation where the structure intersects the building grade surface.

3.) Show the building (existing)grade and finished grades for each side profile with a horizontal line.

4.) From the major corners building grade intersection mark, measure vertically thirty-five (35) for a sloped roof or thirty (30) scaled feet for a flat roof and identify and mark the maximum hillside building height. Connect the maximum hillside building height control points for each side profile with a horizontal line.

Applicant's additional information, notes, and comments:

Appendix E - Site Inventory Feature Checklist

| SITE INVENTORY CHECKLIST | | | | | | |
|--------------------------|---|---|---|---|--|---------|
| | N O T A P P L I C A B L E | C O N S T R A I N T S | M I T I G A T I O N S | O P P O R T U N I T I E S | E N H A N C E M E N T S | REMARKS |
| NATURE FEATURES | | | | | | |
| TOPOGRAPHY | | | | | | |
| Elevation | | | | | | |
| High Point | | | | | | |
| Low Point | | | | | | |
| Contours | | | | | | |
| Slope | | | | | | |
| Orientation | | | | | | |
| Unique Features | | | | | | |
| Hazards | | | | | | |
| | | | | | | |
| MICRO CLIMATE | | | | | | |
| Solar Radiation | | | | | | |
| Ventilation | | | | | | |
| Wind Direction | | | | | | |
| Vegetation Influence | | | | | | |

| | | | | | | |
|---------------------|--|--|--|--|--|--|
| Slope Orientation | | | | | | |
| Unique Features | | | | | | |
| Hazards | | | | | | |
| VEGETATION | | | | | | |
| Type | | | | | | |
| Extent | | | | | | |
| Screening | | | | | | |
| Buffering | | | | | | |
| Erosion Control | | | | | | |
| Slope Stabilization | | | | | | |
| Preservation Area | | | | | | |
| Fuels Management | | | | | | |
| Unique Species | | | | | | |
| Hazards | | | | | | |
| WILDLIFE | | | | | | |
| Value | | | | | | |
| Habitat | | | | | | |
| Corridor | | | | | | |
| Unique Species | | | | | | |

| | | | | | | | | |
|---------------------------------|--|--|--|--|--|----------------|--|--|
| SITE INVENTORY CHECKLIST | | | | | | | | |
| | N O T A P P L I C A B L E | C O N S T R A I N T S | M I T I G A T I O N S | O P P O R T U N I T I E S | E N H A N C E M E N T S | REMARKS | | |

| | L | | | E | S | |
|--|---|--|--|---|---|--|
| SENSITIVE & SIGNIFICANT LANDS | | | | | | |
| Visibility | | | | | | |
| Scenic Vistas | | | | | | |
| Landforms | | | | | | |
| Surface Waters | | | | | | |
| Eco-Systems | | | | | | |
| Unique Features | | | | | | |
| Hazards | | | | | | |
| GEOLOGY | | | | | | |
| Landform Location | | | | | | |
| Surface Materials | | | | | | |
| Depth to Bedrock | | | | | | |
| Seismicity | | | | | | |
| Unique Features | | | | | | |
| Hazards | | | | | | |
| HYDROLOGY | | | | | | |
| Surface Waters | | | | | | |
| Drainage Patterns | | | | | | |
| Aquifer Recharge | | | | | | |
| Water Quality | | | | | | |
| Floodplain | | | | | | |
| Unique Features | | | | | | |

| | | | | | | |
|---------------------------------|--|--|--|--|--|----------------|
| Hazards | | | | | | |
| SOILS | | | | | | |
| Types | | | | | | |
| Characteristics | | | | | | |
| Suitability | | | | | | |
| Erosion | | | | | | |
| Depth to Water Table | | | | | | |
| Limitations | | | | | | |
| Unique Features | | | | | | |
| Hazards | | | | | | |
| | | | | | | |
| SITE INVENTORY CHECKLIST | | | | | | |
| | N O T A P P L I C A B L E | C O N S T R A I N T S | M I T I G A T I O N S | O P P O R T U N I T I E S | E N H A N C E M E N T S | REMARKS |
| FACILITIES AND SERVICES | | | | | | |
| Water | | | | | | |
| Wastewater | | | | | | |
| Streets | | | | | | |
| Drainage | | | | | | |
| Fire Protection | | | | | | |
| Electricity | | | | | | |

| | | | | | | |
|---------------------------|--|--|--|--|--|--|
| Gas | | | | | | |
| Telephone | | | | | | |
| Catv | | | | | | |
| Tele-Communication | | | | | | |
| ACCESS | | | | | | |
| Driveway | | | | | | |
| Utilities | | | | | | |
| LAND USE | | | | | | |
| Proposed | | | | | | |
| Vicinity | | | | | | |
| Compatibility | | | | | | |
| Controversy | | | | | | |
| OTHER FEATURES | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Appendix F - Suggested Landscape Selections for Hillside Areas (Grasses & Ground Cover)

| name | features | spread | height | comments |
|---|----------|--------|-------------|---|
| evergreen shrubs and groundcovers | | | | |
| Creeping Mahonia AKA Oregon Grape Holly | D Z | | 6"-12" | Hard to establish, reddish in winter |
| Bar Harbor Juniper | D | | 6"-8" | Soft blue foliage in summer |
| Blue Chip Juniper | D | | 8"-10" | Blue slate foliage |
| Blue creeping Juniper | D | | 18"- 24" | Spreading or mounded form |
| Buffalo Juniper | D | | 12"- 18" | True spreader, bright olive green foliage |
| Common Mountain Juniper | D | | 2'-4' | Native low spreading juniper |
| Hughes Juniper | D | | 12"- 18" | Turns light purple in winter |
| Tammy Juniper | D | | 2'-4' | Hardy, dense, soft dark green foliage |
| Mugo Pine | D | | varies | Mushroom shaped, large shrub or small tree |
| Penstemon, Pine- leaf | D | | 6"-8' | Pink orange or red flowers |
| Penstemon, Needle-leaf | D | | 2"-6" | Vivid dark blue flowers, bluish green foliage |
| Pfitzer Juniper | D | | varies | Many forms |

| | | | | |
|-----------------------------------|---------|--------|---------|---|
| low water deciduous shrubs | | | | |
| Barberry, Korean | D | 2' | 1' | Purple leafed, thorny |
| Buffaolberry, Silver | D | 8'-12' | 6'-8' | Need male and female for fruit |
| Burning Bush | D | 6'-8' | 6'-8' | Crimson fall color |
| Cherry, Nanking | D Z | | 8'-20' | Hardy, edible fruit. Can be trained as a tree |
| Cherry, Sand | D Z F G | 4'-5' | 3'-4' | Native, edible fruit, likes sandy soil |
| Coral Berry/Indian Currant | D F G | 3'-4' | 4'-6' | Native, loose shape |
| Cotoneaster | D Z F G | varies | varies | Good choice, many varieties |
| Currant, Alpine | D Z | 5' | 3' | Dark glossy green |
| Elderberry, Blue | D | 6'-10' | 10'-15' | Hardy, edible fruit |
| Gooseberry, Slender | D | 3' | 4' | Erect habit, edible fruit |
| Lilac (Common, Late, Persian) | D Z F | 10' | 15' | Mulch delays bloom |
| Maple, Rocky Mountain | D | 10' | 20' | Multi-stemmed, good color |
| Mountain Mahogany | D F G | 15' | 10' | Hardy upright |
| Ninebark | D | 4' | 6' | Fall color, shedding bark |
| Peashrub | D | varies | varies | Upright habit, very hardy, small yellow flowers |

| | | | | |
|--------------------------------|---------|--------|--------|--|
| Potentilla | D Z F G | varies | varies | Many varieties. Yellow and white blooms |
| Privet New Mexico | D | 8'-10 | 8'-10' | Native, very low water, early bloom |
| Rabbit Brush | D F G | 3' | 4' | Many varieties, blue color |
| Rose, Austrian Copper | D | 4' | 5' | Bright red and yellow flowers |
| Rose, Shrub | D Z F G | 3' | 4' | Hardy native |
| Rose, Native Fender | D | 3' | 5' | Long bloom time, native |
| Serviceberry | D | 5' | 15' | Good choice, berries |
| Spirea, Blue Mist | D | 2' | 2' | Late summer blue flowers. Cut back in Fall |
| Sumac, Cut Leaf | D | 6' | 8' | Does well in poor soil |
| Sumac, Smooth Dwarf | D | 4'-6' | 3'-5' | Glossy dark green leaves turn red in fall |
| Sumac, Three Leaf | D Z | 5' | 6' | Native spreader |
| low water ground covers | | | | |
| Ajuga, Carpet Bugle | D | | 6"-8" | Better in part shade. Flowers |
| Border Jewel, Himalayan | D | | 6"-8" | Good in dry areas |
| Creeping Baby's Breath | D | | 3"-6" | Flowers, will form thick carpet |
| Creeping Penstemon | D | | 1"-2" | Blue purple bloom early |

| | | | | |
|---|-----|-------|--------|--|
| | | | | summer |
| Creeping Phlox | D | | 4"-8" | Moss like foliage. Early bloom |
| Creeping Potentilla | D Z | | 1" | Aggressive, direct sun, yellow flowers |
| Hall's Honeysuckle | D | | 6"-12" | Vinelike, prefers shade |
| Hardy Ice Plant | D | | 1"-2" | Reddish winter color |
| Hens and Chicks | D Z | | 2"-4" | Will grow in poor soil |
| Kinnickinnick | D | | 4"-6" | Hard to establish, use with evergreens |
| Moneywort | D | | 1"-2" | Yellow Spring flowers |
| Periwinkle | D | | 2"-6" | Good year round plant. Blue or white flowers |
| Pussytoes | D | | 2"-4" | Native. Good on rocky slopes |
| Sedum (Dragons Blood, Goldmoss, Oak-leaf, etc.) | D Z | | 2"-4" | Popular choice, comes in many forms |
| Snow in Summer | D Z | 4'-5' | 4"-6" | Hardy, woolly silver foliage, white flowers in May |
| Snow On The Mountain | D | | 6"-12" | Aggressive. Green and white foliage |
| Strawberry, Barren | D Z | | 4"-6" | Fruitless, turns bronze in spring |
| Strawberry, Mock | D Z | | 2"-6" | Aggressive, forms rich green carpet |

| | | | | |
|------------------------------------|-------|-------|--------|---|
| Strawberry, Wild | D Z | | 2"-6" | Native, edible tart fruit |
| Thyme, Common | D | | 4"-6" | Vigorous, adaptable, fragrant foliage |
| Thyme, Creeping | D | | 1" | Small pink flowers in early spring |
| Thyme, Woolly | D | | 1/2" | Good around stepping stones |
| Veronia, Speedwell | D | | varies | A diverse group with blue or pink blooms |
| Wall Germander | D | | 4"-10" | Mounding, dark green leaves and pink flowers |
| Woodruff, Sweet | D | | 4"-6" | Aggressive, good for dry shade |
| Woolly Yarrow | D Z | | 4"-8" | Fernlike, mildly invasive |
| low water perennials | | | | |
| Asters (Dwarf Alpine, New England) | D | 3'-4' | 18" | Prefer sun. Mostly blues, pinks and purples |
| Blanket Flower | D | 3'-4' | 3'-4' | Native with orange red flowers. Tends to spread |
| Butterfly Weed | D | 4' | 3' | Orange flowers attract butterflies |
| Columbines | D Z | 1' | 1'-2' | Colorado State Flower |
| Coneflower, Purple | D F G | 2'-3' | 4' | Native upright with purple flowers |

| | | | | |
|---------------------------------|---------|--------|--------|---|
| Coreopsis, Lance | D | 1'-2' | 1'-3' | Dependable native with yellow flowers |
| Coreopsis, Threadleaf | D | 2' | 2 1/2' | Native upright with yellow flowers |
| Daisies, Shasta | D Z | 1' | 1'-2' | White with yellow center, good for cuttings |
| Daylily | D | 3' | 2' | Hardy clumps with many colors |
| Fernleaf Yarrow | D Z | 2' | 2 1/2' | Yellow flowers. Can be invasive |
| Flax, Blue | D Z | 18" | 2' | White and dwarf varieties available |
| Fleabane | D | 4' | 3' | pink and violet flowers |
| Gayfeather | D | 18" | 2' | Spiked with purple blooms |
| Harebell | D | 18" | 2" | Native with blue flowers. Good in rocky areas |
| Harebell, Adriatic | D | 18" | 6" | Wide mounds of red purple flowers |
| Iris (Bearded, Dwarf, Siberian) | D Z | 3' | 2' | Good cuttings plant. Many colors |
| Maltese Cross | D | 18" | 2'-3' | Intense red color |
| Pearly Everlasting | D | 4' | 2 1/2' | Late white bloom. Good in dry areas |
| Penstemon, Elfin Pink | D Z F G | 2' | 2' | Pink flowers |
| Penstemon, Pineleaf | D Z F G | 1' | 1' | Shrubby with red flowers |
| Penstemon, Rocky | D Z F G | 2 1/2' | 3' | Hardy with purple |

| | | | | |
|--|-----|--------|--------|--|
| Mountain | | | | and blue flowers |
| Peony | D | 3' | 3'-4' | Old standby with many colors |
| Polish Bell Flower | D | 1' | 6" | Drought Tolerant. Red purple flowers |
| Poppies, California | D Z | 3'-4' | 6" | Orange flowers. Can be invasive |
| Poppy Mallow | D | 2' | 6" | Red purple flowers. Can spread |
| Tulips | D | varies | varies | Beautiful early season blooms |
| vines | | | | |
| Clematis, Sweet Autumn | D | | | Aromatic white flowers in late summer or fall |
| Clematis, Western | D | | | Tumbled mass of bright green foliage, fragrant |
| Clematis, Yellow | D | | | Native, aggressive with bright green leaves |
| Clematis, Yellow Lantern | D | | | Dense mass with lantern shaped flowers |
| Hall's Honeysuckle | D | | | Aromatic trumpet like flowers |
| Silver Lace Vine | D | | | Aggressive, very hardy |
| Trumpet Vine | D | | | Shrubby, coarse foliage |
| Virginia Creeper/Engleman Ivy/Woodbine | D Z | | | One of the best. Dense foliage, fruits attract birds |

| | | | | |
|-----------------------------------|-------|-------------|-------------|---|
| Wintercreeper, Greenleaf | D | | | Shade loving |
| Wintercreeper, Purpleleaf | D | | | Leaves turn bronze |
| ornamental grasses | | | | |
| Blue Avena Grass | D | 2'-3' | 2'-3' | Powdery blue |
| Bluestem, Big | D F G | 3'-4' | 3'-4' | Native. Fuzzy seed heads |
| Bluestem, Little | D F G | 12"- 18" | 18"- 24" | One of the best. Use on slopes |
| Feather Reed Grass | D | 18"- 24" | 4'-6' | Dramatic upright clump |
| Fescue, Blue | D F G | 8"-12" | 8"-12" | Blue-gray leaves |
| Fountain Grass, Dwarf | D | 12"- 18" | 12"- 24" | Dense tuft of narrow arching leaves |
| Japanese Blood Grass | D | 12"- 18" | 12"- 18" | Wide blades are blood red on upper portion |
| Maiden Grass | D | 2'-3' | 4'-5' | Many cultivars with different forms and colors |
| Plume Grass | D | 2'-3' | 6'-10' | Silver-white plumes above bright green foliage |
| Switchgrass | D F G | 18"- 24" | 2'-4' | Stately fountain- like columns |
| low water turf grasses | | | | |
| Blue Grama | D G | | | Native shortgrass. Mow at 3" height |
| Buffalograss | D F G | | | Use treated seed. |

| | | | | |
|-----------------------|-------|--|--|--|
| | | | | Use below 6000' elevations |
| Crested Wheatgrass | D F G | | | Will form a sod if seeded heavily and mowed occasionally |
| Streambank Wheatgrass | D F G | | | The name aside, this grass prefers dry sandy soils |
| Thickspike Wheatgrass | D F G | | | Prefers sandy soil. Mow periodically at 3" height |
| Western Wheatgrass | D F G | | | Blue green color. Mow periodically at 3" height |

Appendix F - Suggested Landscape Selections for Hillside Areas (Trees)

| name | features | spread | height | comments |
|------------------------------|----------|--------|--------|--|
| large deciduous trees | | | | |
| Ash, Green | D Z | 30' | 50' | Seedless var. many varieties, currently over planted |
| Ash, Marshall's | | 40' | 50' | |
| Ash, Patmore | D | 40' | 50' | |
| Ash, Summit | D | 30'' | 50' | |
| Ash, White | | 30'' | 50' | Autumn Purple Ash most common |
| Cottonwood, Northwest | F G | 40' | 50' | Native in stream beds (hardy), cottonless variety |
| Elm, American | | 40' | 50' | |
| Elm, English | | 40' | 50' | Beautiful tree, not readily available |
| Elm, Hybrid | | 35' | 50' | Homestead Lincoln, Regal, Sapporo |
| Elm, Siberian | | 40' | 50' | Volunteer tree |
| European Beech | | 30'' | 50' | Beautiful specimen tree |
| Linden, American | | 50' | 50' | Drops seeds |
| Linden, Redmond | | 40' | 40' | Fragrant flowers, reddish bark in winter |

| | | | | |
|-----------------------------|---------|-----|-----|--|
| Linden, Silverleaf | | 30' | 50' | Late leaf fall |
| Hackberry | D Z F G | 30' | 50' | Gall psyllid food for migrating birds |
| Honeylocust, Imperial | | 40' | 40' | Thornless and seedless |
| Honeylocust, Shademaster | D | 50' | 50' | Thornless and seedless |
| Honeylocust, Skyline | D | 40' | 45' | Thornless and seedless |
| Honeylocust, Thornless | D | 40' | 50" | Many varieties |
| Japanese Zelkova | | 40' | 50' | Has berries |
| London Plane Tree | | 40' | 50' | Better than American Sycamore |
| Maple, Norway | | 40' | 50' | Many varieties |
| Maple, Schwedler | | 40' | 50' | Large reddish-purple spring leaves |
| Maple, Silver | | 35' | 50' | Decays when old |
| Oak, Bur | D | 40' | 50' | Good drought tolerant tree |
| Oak, Chestnut | | 40' | 50' | Not readily available |
| Oak, English | D | 40' | 50' | Fastigate variety |
| Oak, Northern Red | | 40' | 50' | Late leaf fall |
| Oak, Swamp White | | 40' | 50' | Tolerates poor drainage |
| Oak, White | | 40' | 50' | Late leaf fall |
| Poplar, Lombardy | Z | 10' | 50' | Often used as a hedgerow |

| | | | | |
|-------------------------------|---|-----|-----|---|
| Poplar, Silver | Z | 40' | 50' | Bolleana-columnar variety |
| Sycamore American | | 50' | 50' | Drops twigs and fruit |
| Walnut, Black | D | 40' | 50' | Difficult to transplant, wildlife |
| Western Larch | | 30' | 50' | Deciduous conifer |
| Yellowwood | | 30' | 30' | Sensitive to hand, seed litter |
| medium deciduous trees | | | | |
| Ginkgo | D | 30' | 30' | Plant male tree only |
| Honeylocust, Sunburst | D | 35' | 45' | Light green new leaves tipped with gold |
| Horsechestnut | | 25' | 50' | Slow to establish |
| Kentucky Coffee Tree | D | 30' | 30' | Leafs out late |
| Linden, Crimean | | 25' | 45' | Hard nut-like fruit, seed litter |
| Linden, Greenspire | | 30' | 45' | Fragrant flowers; narrow oval growth habit |
| Linden, Littleleaf | | 20' | 45' | Heavy glossy foliage; fragrant creamy-white flowers |
| Locust, Black | | 30' | 50' | Serious borer problem |
| Maple, Norway Columnar | | 25' | 50' | Compact, narrow growth habit |
| Ohio Buckeye | | 20' | 35' | Large leaves; seed litter |

| | | | | |
|------------------------------|---|-----|------|--|
| Western Catalpa | D | 25' | 50' | Leafs out late |
| Willow | | 40' | 50' | Many species |
| Yellow Buckeye | | 30' | 40' | Prefers moist soil; seed litter |
| small deciduous trees | | | | |
| Amur Chokecherry | D | 15' | <30' | Don't over water |
| Amur Corktree | D | 20' | <30' | Fruit litter |
| Apricot | D | 20' | <30' | Pink Spring flowers; dense, bushy tree w/orange full color |
| Ash, European Mountain | | 20' | <30' | Colorful ornamental |
| Ash, Singleleaf | D | 10' | <30' | |
| Ash, Wafer (Hop Tree) | | 10' | <30' | Native to southwest Colorado |
| Aspen, Quaking | Z | 15' | 60' | Reproduces from roots |
| Canada Red Cherry | D | 15' | <30' | Fragrant white flowers and red cherries |
| Cherry, Mont. Sour | D | 10' | <30' | |
| Crabapple | | 15' | <30' | Choose disease resistant varieties (Malus; "Adams", "Centurian", "Zelkirk", "Henningi", "Indian Summer", "Ralph Shay") |

| | | | | |
|------------------------|-------|-----|------|--|
| Goldenrain Tree | D Z | 20' | <30' | Decorative Seed Pods |
| Hawthorn (many var.) | D F G | 15' | <30' | Many varieties |
| Japanese Tree Lilac | D | 15' | <30' | White flowers |
| Maple, Amur | D | 15' | <30' | Multi-stem common |
| Maple, Hedge | D | 20' | <30' | |
| Maple, Tatarian | D | 10' | <30' | Samara red in summer |
| May Day Tree | | 15' | <30' | |
| Oak, Scrub (Gambel) | D | 15' | <30' | Don't over water, native to foothills, extremely hardy |
| Olive, Russian | D F G | 20' | <30' | Drought tolerant, invades drainage areas |
| Pear, Bradford | | 18' | <30' | White flowers; maintains shape w/little maintenance |
| Pear, Callery | D | 15' | <30' | |
| Pear, Ussurian | D | 20' | <30' | |
| Plum, Native | D F G | 15' | <30' | |
| Plum, Double Flowering | D | 8' | 12' | Double pink flowers; prefers rich, moist soil |
| Plum, Newport | D | 15' | <30' | |
| Serviceberry | D | 20' | <30' | White flowers, berries, very hardy |
| Sumac, Smooth | D | 10' | <30' | |

| | | | | |
|-----------------------------|-------|-----|------|--|
| Sumac, Staghorn | D | 15' | <30' | |
| Turkish Filbert | D | 20' | <30' | |
| large conifer trees | | | | |
| Fir, Douglas | | 20' | 50' | Does well on shady sites |
| Fir, White | | 25' | 50' | Nice landscape tree |
| Pine, Austrian | D | 25' | 50' | More tolerant of urban sites than Ponderosas |
| Spruce, Blue | F G | 25' | 50' | Beautiful landscape tree |
| Spruce, Engelmann | | 25' | 50' | High elevation tree |
| medium conifer trees | | | | |
| Pine, Limber | | 25' | 50' | Light bluish-green, twisted needles |
| Pine, Lodgepole | | 25' | 50' | High elevation trees |
| Pine, Ponderosa | D F G | 25' | 50' | Native to foothills |
| Pine, Scotch | | 30' | 50' | Fast growth rate, good screening |
| | | | | |
| small conifer trees | | | | |
| Juniper, Rocky Mountain | D F G | 15' | <30' | Native to foothills |
| Juniper, Upright | | 15' | <30' | Many varieties |

| | | | | |
|----------------------|---|-----|------|---------------------------------|
| Pine, Bristlecone | D | 15' | <30' | Dense, bushy branches |
| Pine, Pinon | D | 15' | <30' | Don't overwater, edible seed |

Appendix G - Hillside Development Evaluation Letter Example

HILLSIDE DEVELOPMENT EVALUATION LETTER EXAMPLE
ZONING ADMINISTRATION
DEVELOPMENT SERVICES

[Date]

[Contractor Name]
[Company Name]
[Address]
[City], [State] [Zip]

RE: Hillside Overlay Code and Design Guidelines Compliance and Evaluation Report: [Site Address]

Dear [Contractor Name] :

This letter is intended to provide you with an evaluation regarding your project's compliance with the requirements of the City's Hillside Code Requirements and Design Guidelines for your new [project] located at the above address. It is the responsibility of the builder to implement the Hillside requirements of your approved Hillside Site / Lot Grading Plan (HSS/LGP).

The City Zoning Administration Office conducts follow-up inspections on all new projects which have been built in the hillside overlay zoned areas. Generally, the inspectors compare the submitted Hillside Site / Lot Grading Plan (HSS/LGP) with the actual development and determine compliance and evaluate the following criteria and/or elements:

Compliance Criteria:

I Vegetation Preservation I Retaining Walls I Cuts & Fills

I Driveway Width I Structural Setbacks I Height

I Fuels Management Practices

Evaluation Elements:

I Streetscape Appearance I Side/Rear Appearance I Incorporates Natural Vegetation

I Structure Matches Grade I Mass/Height I Use of Natural Building Materials

I Use of Compatible Colors I Building Form I Forced Walkouts and Retaining Walls

I Hillside Character Maintained I Natural Grading I Percent of Front Yard in Natural Vegetation

Our evaluation of your project was as follows:

The property and project was found to be in substantial compliance with the approved HSS/LGP plan, dated , and is in substantial compliance with City Hillside regulations and guidelines.

or

The property and project was found not to be in compliance with the approved HSS/LGP plan, dated , and is not in compliance with City Hillside regulations and guidelines. Specific actions which need to be taken to bring the site and project into compliance are listed below and/or illustrated on the attached drawing or report. Please notify me once you have corrected the

identified deficiencies and I will perform an additional follow-up inspection. If you have any questions please feel free to contact our office. Your understanding and cooperation will be appreciated.

We commend your actions and desire to express our appreciation for your efforts to make the Hillside a better place for all residents of the City of Colorado Springs.

Sincerely

Larry Larsen
Planning Technician

101 W. Costella; Suite 212 | Colorado Springs, Colorado 80903 | Telephone (719) 578-6919

COLORADO SPRINGS HILLSIDE DEVELOPMENT FOLLOW-UP INSPECTION REPORT

HS NUM: _____ ADDRESS: _____ RBD NUM: _____

INITIAL INSPECTION: _____ DATE INSPECTED: _____ INSPECTOR: _____ PHOTOS: _____

FINAL INSPECTION: _____ DATE INSPECTED: _____ INSPECTOR: _____ PHOTOS: _____

REINSPECTION REQUIRED? _____ SUSPENSE DATE: _____

BUILDING STATUS COMPLIANCE WITH SITE PLAN

___ No Work Done ___ Full Compliance

___ Site Cleared/Foundation ___ Substantial Compliance

___ Framing ___ Noncompliance (Enf. Case)

___ Finishing/Interior ___ Not Rated

___ All Work Done

Reasons for noncompliance: (1)

___ Missing Trees ___ Structure or Deck

___ Missing Other Vegetation ___ Bulk Standards

___ Grading (Cuts/Fills) ___ Retaining Wall

___ Driveway Width ___ Other or Multiple

___ Fuels Management Practices

HILLSIDE DESIGN CRITIQUE (2) (Excellent, Good, Fair or Poor)

Parcel Features - Site:

___ Streetscape Appearance ___ Incorporates Existing

___ Side/Rear Appearance Natural Vegetation

___ House Matches Grade

___ Overall Rating

Architectural Features - Structure:

___ Mass/Height ___ Color: _____

___ Use of Natural Materials ___ Building Form

___ Overall Rating

Has the lot maintained it's hillside character?(3) _____

Did the lot have any HS character to start with?(4) _____

What % of the front yard contains native vegetation?(5) _____

Does the grading of the site appear natural?(6) _____

Is there a basement walkout? _____ Was it forced? _____

Is there a retaining wall? _____ Was it forced? _____

Comments:

Appendix H - Geologic Hazard Evaluation Ordinance

(ATTACH SIGNED & CERTIFIED COPIES OF GEOLOGIC HAZARD MITIGATION ORDINANCE & RESOLUTION)

Appendix I - Grading plan / Grading Enforcement Ordinance

(ATTACH SIGNED & CERTIFIED COPIES OF GRADING PLAN / GRADING ENFORCEMENT ORDINANCE & RESOLUTION)

Appendix J - Hillside Overlay Map

(ATTACH HILLSIDE OVERLAY MAP)

Appendix K - Comprehensive Plan Goals, Policies and Recommendations

CITY COMPREHENSIVE PLAN CONFORMITY

The Hillside Design Manual endeavors to implement numerous goals, objectives, policies, and recommendations of the City of Colorado Springs Comprehensive Plan, including, but not limited to the following:

Goal 5.1: Assure that the City's land development regulations provide for efficiency, compatibility, compliance, variety, flexibility, and innovation.

Policy 5.1.4: Incorporate performance standards, where appropriate, into land development regulations and criteria.

Recommendation 5.1.R4: The City should prepare performance standards and criteria for incorporation into the Zoning Ordinance. The areas for performance standards and criteria shall include:

.... F. Preservation of natural and historic features

.....L. Land Suitability

Goal 9.2: Preserve, enhance, and promote the significant features of the City's natural environment.

Policy 9.2.1: In areas where both controlled development and preservation are possible, retain significant natural features in private ownership and protect them as part of a development plan review. Land suitability studies shall be required prior to the approval of development in these areas....

Recommendation 9.2.R2: The City should establish design guidelines for those preservation areas that could be developed without harm to the significant natural features."

Goal 9.4: Protect the environment from existing and potentially harmful conditions and activities.

Policy 9.4.3: Carefully review development in suspected natural hazard areas. Land suitability studies may be required prior to the approval of development in these areas in order to avoid potential hazards. The land development review process is the appropriate vehicle for the earliest possible identification of all environmentally sensitive land features. Site development plans should contain specific methods for handling limited development, or for maintaining environmentally sensitive land features.

Goal 9.5: Preserve, promote and enlarge the urban forest to enhance air quality, noise abatement, wildlife habitat, community aesthetics, and general quality of life. The urban forest includes all the tree and shrubbery on public or private property within the City.

Policy 9.5.3: Promote public and private tree planting, replacement and preservation programs to sustain and expand the urban forest.

Recommendation 9.5.R.1: The City should substantially increase the number of public and private trees in ten years.

Goal 16.1: Promote the application of urban design considerations which define and enhance the City's unique character.

Policy 16.1.1: Enhance and strengthen the overall image of the City by identifying its unique

characteristics, promoting the urban design qualities of specifically designated areas, and defining unifying design elements within the community.

Recommendation 16.1.R2: The City should initiate a process to identify unique areas of the community based on physical features and the character of existing development, and should examine methods to protect, preserve, and promote those areas.

Recommendation 16.1.R6: The City should use the results of the Natural Features Inventory to identify significant landforms and develop appropriate design guidelines to preserve the physical character of those features.

Goal 16.4: Ensure the continued protection, availability and accessibility of those distinctive natural, archaeological, paleontological and historic features which contribute to and reflect the City's character and heritage.

Policy 16.4.1: Ensure that any development of the City's mountain backdrop and significant landforms such as ridgelines is conducted in a manner which protects the physical character of those features.

Policy 16.4.2: Preserve and provide appropriate access to the existing landscape, archeological, paleontological and historic features of the City through sensitive development and construction practices, and determination of preferred ownership."