

LINDSAY CREEK LAND USE ASSESSMENT INFORMATION

THE LINDSAY CREEK PROJECT: WATERSHED AND COMMUNITY BASED LAND USE ASSESSMENT

March, 2005

I. OVERVIEW OF THE LINDSAY CREEK LAND USE COMPONENT

The land use assessment effort of the Lindsay Creek Project was developed as part of larger project funded by the State Water Resources Control Board (SWRCB) and conducted by the Natural Resources Services Division of Redwood Community Action Agency in Eureka, California. The goals of this project are to develop a **transferable** model for use throughout rural California for watershed-based land use planning.

The Lindsay Creek Project was fortunate to be able to use publicly accessible data gathered and analyzed through the County's ongoing General Plan Update. These materials simulated—for the purpose of this demonstration project—the 'land use assessment' conducted during traditional land use planning. As the Lindsay Creek Project scope is to design a process that supplements—and does not duplicate—land use planning efforts, little specific analysis was conducted by the land use planning component.

Therefore, the recommendations contained in the Strategy are the *result* of a **tool developed to supplement traditional land use planning**—much of which was **not duplicated** during the study. Under state law a traditional General Plan is required to include seven sections, or 'elements,' which include land-use, circulation, housing, conservation, open-space, noise, and safety. If the watershed and community-based process demonstrated in the Lindsay Creek watershed had been part of a larger General Plan effort, the recommendations contained in the Strategy would likely have been distributed throughout four 'elements': the land use, conservation, open-space and safety.

It should be noted that it is the activities and efforts of traditional land use planning which provide the balance to the information found in the Lindsay Creek Strategy—and more fully accommodate economic development, transportation, and housing issues, among others. The Strategy is not meant to be a 'stand alone planning document' but rather one part of a greater whole that, if coupled with the results of a traditional plan process, may eventually become a Community Plan for the Lindsay Creek watershed and community.

WHAT THE LAND USE COMPONENT IS . . .

Humboldt County is currently undergoing a 20 year General Plan Update (GPU), which includes multiple opportunities for citizens to guide future land use and growth patterns. Humboldt County's Department of Community Development Services has a knowledgeable and dedicated staff, but they need active community participation in order to produce quality plans for the future. In the absence of local community input, land use decisions are often based on the information and knowledge that is readily available; usually this includes input from special interest groups, a small group of informed citizens, and state and federal legal mandates.

The intent of the Lindsay Creek Project’s land use component is to:

- 1) Assist in the development of a system to better balance the interests of the watershed with those of the community;
- 2) Represent the legal issues and boundaries of land use planning to both the Lindsay Creek Project Team and community throughout demonstration of that process; and,
- 3) Facilitate community members to achieve their goals for the future of the Lindsay Creek watershed and Fieldbrook community by providing information, data, and recommendations that will enable them to better participate in the next official land use planning process—whether that may be an update of the Fieldbrook Community Plan or as part of the Humboldt County General Plan Update.

In order for the Lindsay Model to be transferable to other areas, it must be cost effective and sustainable. Like traditional land use planning, watershed-based land use planning must solicit and incorporate the input and values of the community it serves to be effective. By inviting knowledgeable residents and community members to actively participate in the process, both these objectives are met, as well as stimulating greater input and buy-in. Further, if the resultant plan includes recommendations created by and for community residents—to implement independent of government—community buy-in, stewardship, and sustainability are likely increased.

Residents involved with development of the policies set to guide decision-making are often empowered to make choices and take community-initiated action to protect and improve the things that they value in their watershed. Ultimately the goal of this project demonstration is the integration of a watershed foundation with authentic community participation to address land use planning issues and provide added resources applicable to land use decision-making.

To reach that goal, the land use effort of the Lindsay Creek Project has compiled and presented materials related to land use planning. The land use assessment component worked with public participation efforts to identify a community vision for the future of the Lindsay Creek watershed. Research was conducted into example policy and citizen-oriented actions successfully implemented elsewhere that might achieve the vision identified by residents participating in the project.

WHAT THE LAND USE COMPONENT IS NOT . . .

It is important to note what the Lindsay Creek Project land use assessment is *not*. It is not a traditional Community, General, or Comprehensive Plan. These are all official documents as specified in California State Law (see below) and which undergo specified environmental and public review. While the Lindsay Creek land use component shares some similar characteristics with these traditional and legal processes, it is meant to be a supplemental resource for planning professionals, community groups, and citizens.

Early interactions with the region’s land use planning officials, made it clear that while they are searching for new ways to address endangered species and water quality regulations, a *duplication* of their efforts would not be useful or appreciated. As one of the Lindsay Creek Project’s objectives was to create a model **transferable** to other jurisdictions, the land use assessment was restricted to those efforts which added to, but did not duplicate, traditional planning methods. Therefore, materials related to population, employment, build out, and other topics generally gathered by traditional processes were not repeated. This type of land use planning information specific to the Lindsay Creek watershed was garnered from the County’s *Building Communities Report: A Discussion*

Paper for Community Workshops, and other public documents produced by Humboldt County during its General Plan Update, (<http://www.planupdate.org/meetings/bldgcomm/BCFULLWB.PDF>).

Information gathered for the land use assessment can inform the ongoing dialogue and decision-making process related to Lindsay Creek watershed's future. Watershed residents, landowners, and stakeholders, as well as land managers and local government agencies, can use the land use planning materials. The compiled example policy, code, and citizen-oriented actions will be integrated with watershed assessment management directives and community input to form the policy recommendations, resource suggestions, and community action items in the *Strategy for the Lindsay Creek Watershed & Community*.

II. LAND USE IN THE LINDSAY CREEK WATERSHED

THE LINDSAY CREEK WATERSHED

The community of Fieldbrook and surrounding Lindsay Creek watershed are wonderful places to live. Just inland from the coast, it has more sunshine and warmer temperatures. The area has quiet neighborhoods, working farms, and beautiful forest-covered hillsides. Close-knit community members exude a sense of pride and feelings of respect for their watershed resources. However, these qualities also mean that the area is attractive and will continue to grow. With growth, comes challenge.

Thoughtful design and planning can meet these challenges while reducing the cost of providing public infrastructure and public services such as roads, sewer, water, and fire protection. By selecting Lindsay Creek as the demonstration watershed for testing of newly developed watershed-based planning tools and process, residents will be provided with a compilation of technical data and land use-related suggestions. Equipped with this information, residents will have a tangible opportunity to proactively consider what, where, and how they build to ensure that new development enhances what they already have and fits what they want their community to be.

III. LAND USE RESULTS

Lindsay Creek watershed is unique in Humboldt County due to the large percentage (Approximately 1600 acres) of land that is permanently protected as non-industrial timberland under a conservation easement held by the Pacific Forest Trust on land owned by the Fred M. van Eck Forest Foundation. This means that the land use cannot change, even if the County wanted to rezone the property.

Agricultural lands in Humboldt County are often protected through the State Williamson Act, which reduces the tax burden on property if the landowner agrees to maintain agricultural practices and not subdivide the property. There are no Williamson Act parcels in Lindsay Creek.

LAND USE PLANNING THEMES

During the research; interactions with the community and agencies; and integration of watershed, community, and land use efforts, several important themes emerged. These themes as well as other information useful in land use decision-making, are summarized below.

WHAT IS “LAND USE”?

In the most general sense, land use refers to what is actually happening within a property on-the-ground—is the property in a natural state or is there a home or business on the property. For instance, in the photo to the right, land is being used for roads, structures (probably both residential and agricultural in nature), ponds, forested hillsides, etc.

In the Lindsay Creek watershed, there are several sources of information relating to how land is being used. Obviously, the most accurate information is what is happening on the property. However, documenting that is time consuming and costly—something beyond the scope of the project—and which the County has not comprehensively compiled since the 1964 Community Plan. Another source of land use information is the tax assessor’s ‘zoning’, which is used as the basis for taxes. However, some of this information can be years out of date. The final source of information is the Humboldt County Department of Community Services (Planning Department) which keeps records of ‘land use’ and ‘zoning’. Within the Planning Department, ‘zoning’ corresponds to a land owner’s current entitlement regarding use of the land, rather than what may exist. ‘Land use’ is a temporary designation that identifies what the Planning Department anticipates a parcel will be zoned in the future, when an update is completed.



Varied land uses are visible in this air photo taken just upstream of the confluence of Lindsay Creek with the Mad River (outside of the frame, top left).

AN OVERVIEW OF LAND USE PLANNING

Land Use planning provides opportunities for citizens to have input into how the community evolves in the future, see photos at right. Some of the topics for input include: possible uses for land, the desired overall appearance and character of the community, types and scale of future infrastructure development (roads, water, sewer), environmental protections (“green infrastructure”), economic development, and recreational opportunities.

Government land use planning processes – general plans, community plans, zoning, land use-related ordinances and how these plans are developed and relate to one another – are often not well understood by the average citizen. This is unfortunate as everyone in the community has a stake in how their community grows, and ensuring that community values are protected and improved, and tax dollars are spent wisely. General Plans are the documents which set policy and zoning for a city or county. These zoning designations and policies guide decision-making for



This aerial photo of ‘downtown’ Fieldbrook illustrates a type of residential development pattern that is interspersed with the surrounding forested areas.



In contrast, this aerial photo of a Humboldt County community center illustrates a more compact form of residential development.

twenty or so years—including what development should be allowed in specific areas.

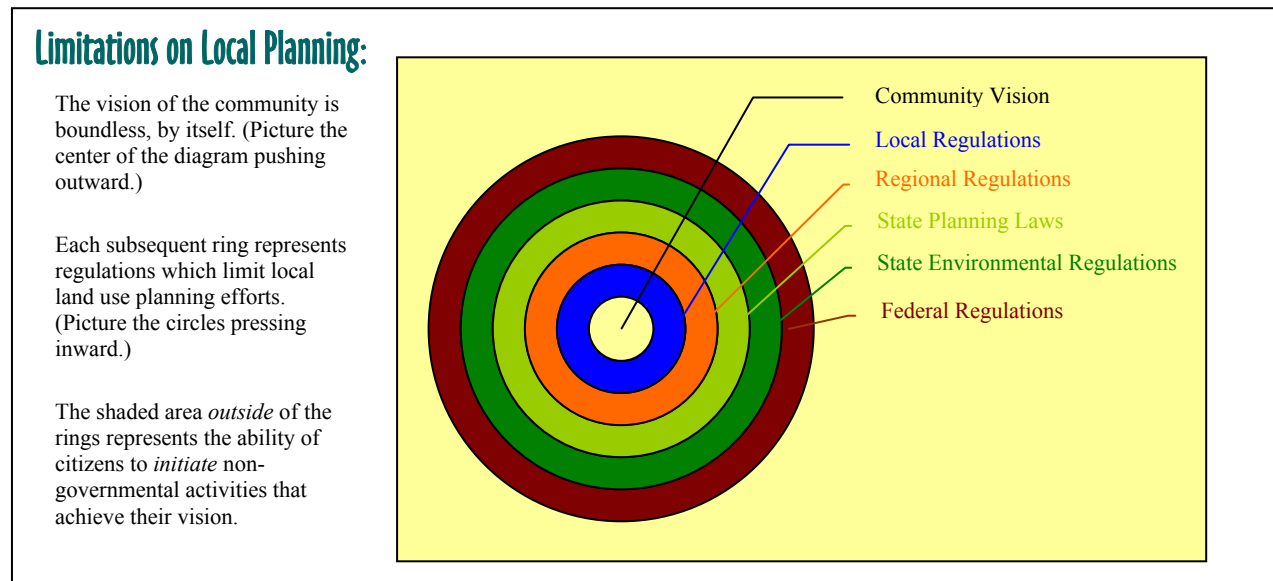
Many people do not get involved early in land use planning efforts, partially because they do not perceive they will be able to influence the final outcome. Or, community members become involved in land use planning upon hearing of a proposed residential or other development *project* their neighborhood. However, by the time a project is proposed, decision-makers are limited in how they can respond to the community because *policy and zoning have already been set*. So, to have a voice in the type of infrastructure investments (roads, sewer), zoning, development patterns, resource protections and/or amenities that will be approved, active participation in land use planning—particularly if a Community or General Plan is being updated—is crucial.

However, the desires of the community are not the only force to affect the evolution of a community or region.

LIMITATIONS OF LAND USE PLANNING

There are very specific requirements and limits set on planning authorities— primarily in the form of state and federal laws, see graphic below.

Regulations affecting land use, particularly State General Plan Law and Planning, Zoning, and Development Law, require specific outcomes while leaving the process of achieving the outcomes to local government. Local land use planning must respond to state land use planning law and both state and federal regulations concerning protection of species and habitats, water, air, agricultural land, health and human safety, and open space. In addition, local land use planning must incorporate regulations affecting land conservation, forestry practices, development, sediment and erosion, and fire safety.



This amalgamation of laws and regulations is complex, and it is no wonder that many people have little understanding of land use planning, see Appendix C, Attachment 2C and 3C. Add to the mix of legal authorities and requirements, the fact that land use planning is also subject to political influences, public input, and input from special interests, the picture becomes even murkier.

Ultimately, the combination of legal requirements and restrictions, combined with political and public influences, makes creation of a land use plan that meets the desires of the public a very challenging proposition.

PLANNING FOR THE FUTURE MEANS MAKING CHOICES

The purpose of land use planning is to create a “blueprint” of how land will be used, generally over a twenty year term. A vital part of determining any land use plan is the vision of the area’s residents. All planning efforts are challenged by the need to understand and reflect in the “blueprint” a vision which includes all of an area’s residents—not only those who participate. One way to address this challenge is to have multiple opportunities and methods for community members to participate in the planning process.

In the Lindsay Creek watershed, some of the issues and values shared by community participants in the Lindsay Creek Project include:

- Strong support for individual and private property rights.
- A desire to keep growth at a slow rate, similar to that of the past few years.
- A concern about the growth inducing affects of potential expansion of sewer service within the watershed.
- Concern over water quality and the desire to have water quality which supported fish and enabled children to have safe contact with creeks.

These particular issues were selected here to illustrate another concept related to land use planning—that long-range planning sometimes involves making choices. Strict application of the first value (the strong support for individual and private property rights,) would support any of the larger property landowners to have large residential developments on their property—in conflict with the community’s expressed desire to see a slow rate of growth. Similarly, protecting water quality might require expanding sewer services and limiting road construction—possibly conflicting with the first and third listed values.

Determining the relative priorities of the community is a longer process than the current Lindsay Creek Project was able to achieve. What the project did accomplish is the identification of issues and the initiation of the community dialogue that will enable relative priorities to be selected. The *Strategy* and its appendices provide the community and area planners a compilation of technical data and land use-related suggestions. Equipped with this information, residents will have a tangible opportunity to proactively consider what, where, and how they build to ensure that new development enhances what they already have and fits what they want their community to be. This information can then be used in an “official” planning process, be it the current GPU or a future update of the area’s Community Plan.

THE COMMUNITY’S ROLE

Public input into The Lindsay Creek Project clearly indicated a preference for a rate of growth similar to that of the past few years. Even at this slow rate of growth, continued development over the next twenty years will change the character of the community—unless the community plans now to protect its rural character. In addition, it is quite challenging to achieve this desired “slow” rate of growth without limiting the private property rights of landowners, particularly those who own large tracts of land and may want to develop.

The best solution is to put into place policies and recommendations which would allow growth (including large developments on large tracts of land) while also requiring that growth to preserve the rural character and elements valued by the community as a whole.

Across the country, rural communities are dealing with this issue—how to preserve the values and elements of a community when large scale development happens (whether that is one landowner developing a 200 unit subdivision or many smaller lots being purchased and developed.) There are many similar programs to draw from which protect resource values (fisheries, water quality, open space, working landscapes,) and community character, including: low impact development, conservation development, smart growth, sustainable growth, green development, clustered development, form-based development, and focused development.

IV. DEVELOPMENT CONCEPTS

Many of the following concepts have been developed specifically for more urban areas than the Lindsay Creek watershed. However, within each are ideas which are relevant to large scale development which is possible within the watershed—and may assist community members to preserve the values and elements of the community that they value if and when large scale development happens. (Other elements of the information may be useful in the more urban areas of Humboldt County.)

There are many terms used to characterize ‘good’ development—each term is defined differently but most incorporating some of the same key elements. Each also reflects a slightly different perspective by adding new elements or different emphasis on common elements. Collectively, the plethora of terms and ideas can be confusing. According to the December, 2004 Focused Growth Analysis for the Humboldt County General Plan Update, “smart growth” means different things to different people, and its meaning depends on context, perspective and time frame.

Therefore, a brief summary of some of the primary characteristics of ‘good’ growth development concepts follows. Supplementary information on some of these programs is provided as attachments to this report.

Sustainable Development

The key elements of sustainable development include a prosperous economy, a quality environment, and social equity.

Internationally, the ideals of sustainable development are being called “green planning.” Defined as a planning concept to restore the environment and improve overall quality of life, green planning is a comprehensive, integrated, long-term strategy that applies strategic management practices to the challenges of environmental and economic sustainability (Resource Renewal Institute, 1999).

Livable Community Development

Also known as healthy neighborhoods or walkable communities, this type of development has a focus on the human-scale and a return to pre-automobile design elements such as streets laid in a traditional grid system, narrow streets, and use of alleyways. Also important is the ability to walk to parks, schools, churches and small shops. Houses are located near to the streets, which ideally, are tree-lined. Emphasis is also on creating a sense of community—largely through slowing of auto traffic so that “front yards are pleasant places...where people spend more time on porches and meet neighbors along walkways and at street corners” (Burden 1999.)

Some livable community designs also include edible landscaping, common green spaces, and natural drainage. For more information on designs associated with livable communities see *Compact Development for More Livable Communities* (Appendix C, Attachment 4C).

Smart Growth

Smart growth techniques provide a range of options for communities that seek a different approach to growth (EPA, www.epa.gov/smartgrowth). This term for sustainable development became popular during the Clinton Administration. Used by former Vice President Gore, it generally encompasses the principles of sustainable development.

According to the Smart Growth Network's *Why Smart Growth: A Primer*, smart growth recognizes connections between development and quality of life. Smart growth principles are defined as “ensuring that new growth improves the economy, community, and environment of existing communities, and that in building new places, we build places that people want to live in for what they are, rather than for what they are not [not dangerous, not dirty].” While the specifics of smart growth vary from place to place, in general smart growth invests in restoring city centers and older suburbs. New smart growth is town-centered, is transit and pedestrian oriented, and has a greater mix of housing, commercial, and retail uses. It also preserves open space and other environmental amenities.

Smart Growth Principles (EPA, www.epa.gov/smartgrowth):

1. Mix land uses.
2. Take advantage of compact building design.
3. Create a range of housing opportunities and choices.
4. Create walkable neighborhoods.
5. Foster distinctive, attractive communities with a strong sense of place.
6. Preserve open space, farmland, natural beauty, and critical environmental areas.
7. Strengthen and direct development towards existing communities.
8. Provide a variety of transportation choices.
9. Make development decisions predictable, fair, and cost effective.
10. Encourage community and stakeholder collaboration in development decisions.

Focused Growth

“Compact growth, connectivity, a mix of uses, and multi-modal transportation are not simply today’s planning ‘catch phrases’; indeed they are key elements of a focused growth strategy...” Focused growth is the current terminology being used within the Humboldt County General Plan Update (GPU) to describe smart growth and sustainable growth elements proposed for inclusion in the Humboldt 2025 General Plan. The County’s Focused Growth Analysis, released December 2004, highlights the elements of smart growth previously directed by the Board of Supervisors and the Planning Commission for inclusion in the GPU. In addition, the Analysis proposed the following additional techniques: designing better new communities, revitalizing older neighborhoods, creating affordable housing, managing growth and protecting agricultural and timber lands, and offering transportation alternatives.

SITE-LEVEL APPLICATION OF 'GOOD' DEVELOPMENT CONCEPTS

Contemporary Development: Developer-Oriented Best Development Practices.

According to the *Best Development Practices Primer*, contemporary development “blends contemporary and traditional design principles.” Contemporary development incorporates the automobile, stating that it is a fact of life. It is a design style which also recognizes that “low-density lifestyles clearly appeal to most Americans.”

In the introduction, the *Best Development Practices Primer* also states:

For 50 years or more, leading developers, planners, designers, environmentalists, and others have pointed the way toward better development. The American Planning Association (APA), Urban Land Institute (ULI), National Association of Home Builders (NAHB), and many others have published volumes on the subject. When it comes to development guidelines, visionary is good, utopian is not. If guidelines are viewed as utopian, they will be dismissed by the naturally conservative and results-oriented development industry.

Using existing developments which “are exemplary, not in every respect but in many respects. Collectively, they embody all the best development practices...” to illustrate that developers can incorporate quality features and still make healthy profits.

As noted in the *Best Development Practices Primer*, practices of contemporary design are listed below:

Site Development Practices

Practice 1: Keep vehicle miles of travel (VMT) below the area average.

Practice 2: Contribute to the area's jobs-housing balance.

Practice 3: Mix land uses at the finest grain the market will bear and include civic uses in the mix.

- *Contribute to the area's jobs-housing balance*
- *Develop in clusters and keep the clusters small.*

Practice 5: Place higher density housing near commercial centers, transit lines, and parks.

- *Place higher density and senior housing near commercial centers, transit lines, and community facilities.*

Practice 6: Phase convenience shopping and recreational opportunities to keep pace with housing.

Practice 7: Make subdivisions into neighborhoods with well-defined centers and edges.

Practice 8: Reserve school sites and donate them if necessary to attract new schools.

Practice 9: Concentrate commercial development in compact centers or districts.

Practice 10: Make shopping centers and business parks into all-purpose activity centers.

Practice 11: Tame auto-oriented land uses, or at least separate them from pedestrian-oriented uses.

- *Design the street network with multiple connections and relatively direct routes.*

Transportation Practices

Practice 1: Design the street network with multiple connections and relatively direct routes.

Practice 2: Space through-streets no more than a half mile apart, or the equivalent route density in a curvilinear network.

Practice 3: Use traffic calming measures liberally.

- *Traffic calming measures (or slow points) operate on a simple principle: An abrupt change in either horizontal or vertical alignment causes drivers to naturally slow down. Make greater use of short streets, zig-zag curves, traffic circles, textured pavements, and speed humps or, better still, raised crosswalks.*
- *The shorter the uninterrupted length of roadway, the slower the traffic will be. Short stretches ending in T-intersections are particularly effective in reducing speeds and accidents.*
- *On longer stretches of roadway, it is still possible to calm traffic by dividing the length into shorter sections. Introduced at regular intervals.*

Practice 4: Keep speeds on local streets down to 20 mph.

Practice 5: Keep speeds on arterials and collectors down to 35 mph (at least inside communities).

Practice 6: Keep all streets as narrow as possible, and never more than four travel lanes wide.

Practice 7: Align streets to give buildings energy-efficient orientations.

Practice 8: Avoid using traffic signals wherever possible and always space them for good traffic progression.

Practice 9: Provide networks for pedestrians and bicyclists as good as the network for motorists.

- *Provide networks for pedestrians and bicyclists as good as the network for motorists. (FHWA Guidelines: Up to 10,000 vehicles per day if less than 30 mph, then 14' curb lane; between 30 to 40 mph, then 5' bike lane. Roads with 10,000 or more vehicles per day, then 5' bike lane. Source: Adapted from W.C. Wilkinson et al., *Selecting Roadway Design Treatments to Accommodate Bicycles*, Federal Highway Administration, Washington, DC, 1994, p. 19.)*

Practice 10: Provide pedestrians and bicyclists with shortcuts and alternatives to travel along high-volume streets.

Practice 11: Incorporate transit-oriented design features.

- *At a minimum, medium densities are required to support transit service; a mixture of residential, commercial, and institutional uses is preferable to any single use alone.*
- *Grid-like street networks are superior to discontinuous, curvilinear networks; collectors should be closely spaced and should penetrate residential areas and activity centers.*
- *All transit oriented design manuals call for sidewalks along transit routes, on streets leading to transit routes, and radiating out from transit stops to nearby buildings*

Practice 12: Establish travel demand management (TDM) programs at employment centers.

Environmental Practices: Preserve Entire Ecosystems – Mimic Nature

Practice 1: Use a systems approach to environmental planning.

- *Shift planning and regulatory emphasis from the individual development site to the basin or ecosystem to accommodate functional systems which are the appropriate units of environmental analysis and management*
- *Wildlife must be managed as a “community” of interrelated species; actions that affect one species affect others.*
- *Stormwater is best managed on a watershed basis to coordinate the timing of stormwater releases and achieve economies of scale.*

Practice 2: Channel development into areas that are already disturbed.

Practice 3: Preserve patches of high-quality habitat, as large and circular as possible, feathered at the edges, and connected by wildlife corridors.

- *Patches preserved in an urbanizing landscape should be as large as possible. Most species at risk require good-sized patches or specialized habitat or both and, in general, the bigger the patch, the more species*

will colonize it. (Given the right kind of habitat, patches of 15 to 75 acres have been found to support many interior bird species, a host of smaller mammals, and most reptiles and amphibians.)

- *A mosaic of smaller preserves or patches can be pieced together with the help of land developers. Where land is limited, patches should be as nearly circular as possible to minimize edge effects. The edges themselves should be gradual and undulating rather than hard and straight. (Edges invite competition from generalist species, predation, and human disturbance.)*
- *Wildlife corridors should be preserved to serve as “land bridges” between “habitat islands.” Natural landscape connections between patches are preferred to man-made connections along hedgerows, drainage ditches, or railroads.*
- *Riparian strips along rivers and streams are the most valuable of all corridors, used by nearly 70 percent of all vertebrate species in some significant way during their life cycles.*

Practice 4: Design around significant wetlands.

Practice 5: Establish upland buffers around all retained wetlands and natural water bodies.

Practice 6: Preserve significant uplands, too.

Practice 7: Restore and enhance ecological functions damaged by prior site activities.

Practice 8: Minimize runoff by clustering development on the least porous soils and using infiltration devices and permeable pavements.

- *Infiltration can be maximized by clustering development on the least porous soils. In this way soils that allowed infiltration prior to development continue to allow it, while soils that were impervious to begin with remain so, though now covered with buildings and pavement.*
- *Infiltration rates can be further boosted by means of infiltration basins.*

Practice 9: Detain runoff with open, natural drainage systems.

Practice 10: Design man-made lakes and stormwater ponds for maximum environmental value.

Practice 11: Use reclaimed water and integrated pest management on large landscaped areas.

Practice 12: Use and require the use of Xeriscape™ landscaping.

- *Xeriscape™ landscaping can cut water use in master planned developments by 50-60 percent; fertilizer use and landscape maintenance are reduced by like amounts.*
- *Design to minimize maintenance.*
- *Analyze and improve soil conditions.*
- *Use locally-adapted plants.*
- *Irrigate efficiently. Plants with similar irrigation requirements are grouped together into water use zones.*
- *Use turf only where it is needed.*
- *Use mulches to retain soil moisture.*
- *Maintain landscapes properly.*

Building Practices

Practice 1: Offer “life cycle” housing.

- *Utilize “granny flats” or “teenager cottages” behind family homes to mix generations into new developments or existing neighborhoods.*

Practice 2: Achieve an average net residential density of six to seven units per acre (without the appearance of crowding).

Practice 3: Use cost-effective site development and construction practices.

Practice 4: Design in energy-saving features to reduce heating and cooling costs, thereby making housing that much more affordable for owners and renters

- *Align streets for optimum building orientation vis-a-vis the sun and prevailing winds. Ordinarily this means that the buildings' long windowed sides face within a few degrees of true south, so occupants benefit from solar heating in the winter when the sun is low in the sky, and natural shading in the summer when the sun is high.*
- *It is also possible to achieve a dominant north-south building orientation and corresponding energy savings within a curvilinear street network; by means of staggered lots and houses.*
- *Encourage precision landscaping such as deciduous trees that provide shade in summer and do not block light in winter. Strategic placement of shrubs can for wind breaks.*
- *Guidance regarding energy-efficient construction practices is available from the National Association of Home Builders' Energy-Smart Building for Increased Quality, Comfort, and Sales, and the U.S. Department of Energy's Building America Initiative.*

Practice 5: Supply affordable single-family homes for moderate-income households.

Practice 6: Supply affordable multifamily and accessory housing for low-income households.

Practice 7: Tap government housing programs to broaden and deepen the housing/income mix.

Practice 8: Mix housing to the extent the market will bear.

The Best Development Practices Primer, was prepared originally for Florida's Department of Community Affairs and updated for the American Planning Association and the Urban Land Institute (the latter representing the nation's most successful land developers).

Conservation Design

Conservation design was developed on the premise that:

“...many people value their community's rural character, but few realize that this cherished character is programmed to disappear. That's right programmed. Local zoning and subdivision ordinances serve as blueprint for converting undeveloped forest and fields into residential, commercial and industrial lots. Except for permanently protected open space, sooner or later those beloved woods and meadows are almost certain to disappear” (Nemo Fact Sheet #9).

Conservation design is a tool to assist developers in subdivision designs that maximize open space without reducing the number of homes to be built. There is no reduction in structures to be built, and open space is located to protect environmentally sensitive features and permanently protected (ibid). (NEMO Fact Sheet #9 is included in Appendix C, Attachment 5C).

In its simplest form, conservation design is development of a particular parcel in a manner that respects the site's natural and cultural features. Conservation design is usually applied to new residential developments in rural or suburban settings, where specific features—such as mature woodlands or existing trout streams—are preserved through a careful arrangement of new buildings and roads. These assets and other designated open spaces are often set aside for permanent conservation; building design and infrastructure concurrently take maximum advantage of these features (either as views or recreational sites) (US EPA cited 2004).

Rural Clustering or Clustered Development

According to the Center for Watershed Protection, well designed and implemented cluster developments can provide many important economic, environmental and community benefits when compared to conventional subdivision designs. Clustering in rural areas is one of the most effective

tools to reduce impervious cover in sensitive watersheds. (Rural is defined as any area located outside of the water and sewer envelope, and zoned for large lot development of individual lots.)

Although sometimes used interchangeably with conservation design, rural clustering seems to have a slightly different, twofold intent. First, it is designed to measurably reduce the amount of impervious cover created compared to traditional development patterns. Second, it retains a significant fraction of total site area as permanently protected green space (Appendix C, Attachment 5C).

Cluster development can be adapted to address specific local concerns. For instance, where water quality is an issue, elements focusing on stream protection and water quality may be added to basic clustering principles. Some of the elements of a rural cluster designed to protect streams include:

- To prevent runoff, lot grading should be done to maximize “runon”—directing rooftop runoff over pervious surfaces.
- Relaxed road and drainage requirements should include narrow streets (16 to 18 ft) and driveways (12 ft), hammerhead turnarounds and open channel drainage (rather than curb and gutter).
- Another possible element of a rural cluster is a common or shared septic system (OSDS) to dispose of wastewater. The benefit of a common OSDS system is that it allows a tighter cluster pattern and smaller minimum lot size.

Low Impact Development,

Low-impact development (LID) techniques are those that mimic the predevelopment site hydrology to store, infiltrate, evaporate, and detain runoff. They are a natural complement to smart growth approaches that seek to reduce runoff through an improved approach to regional development and site design. Although smart growth approaches applied at the site level reduce the volume of runoff, the use of LID techniques adds to the potential gains by mitigating the effects and pollution levels of the site’s stormwater runoff. LID techniques are usually associated with new development sites, such as subdivisions, parking lots, or other large uses with a high level of imperviousness, and where the hydrological and topographical aspects of the site can easily be determined.

Some aspects of the LID approach, however, are equally applicable to and potentially beneficial for infill development. For example, vegetated buffers can be located next to sensitive areas such as streams to slow the movement of runoff and filter sediment and pollutants. Level spreaders are site features that convert concentrated runoff (such as that from a pipe that carries runoff from a number of impervious surfaces) to sheet flow that can be more evenly dispersed across a slope, thereby causing less erosion than a single, high-volume stream.

Communities must resolve the question of how to pay for LID features on a site. Given that reduced and/or improved stormwater runoff can mitigate the need for treatment cost and system expansion, it might be appropriate to offset the costs borne by private developers who incorporate LID through some financial incentive, such as reduced fees. It might also be determined that the aspects of LID that serve to reduce conventional site development costs— such as clearing and grading—might be sufficient to offset any higher costs for constructing features such as those discussed above. Further, the long-term cost savings (in terms of turf and pavement maintenance and replacement) that are generated by LID features could convince private developers that the additional investment in stormwater mitigation site technology is worthwhile (US EPA 2004).

Better Site Design

The result of a 1997 national site planning roundtable, which met for two years, this style of development is defined by “22 better site design techniques that offer specific guidance.” The guidelines are organized into three areas, focusing on reducing the amount of impervious cover, increasing the area of natural land conserved, and use of pervious areas for effective stormwater treatment (Schueler 2000; *Introduction to Better Site Design*, Appendix C, Attachment 5C).

Meant to promote economically viable and environmentally sensitive site planning, these principles include the following:

- Shorter, narrower streets
- Smaller parking lots
- Increased stormwater treatment practices
- More community open space
- Increased vegetated buffers
- Enhanced native vegetation
- Limited clearing and grading

Neotraditional Design

Neotraditional design also reflects many of the ten smart growth principles listed earlier. Neotraditional community design mimics design elements of traditions, small American towns with strong civic centers. While most often applied to large, new developments, principles of neotraditional design have also been applied to reviving older community centers. Those principles include:

- Return to the “pedestrian” or village scale
- Decreased reliance on the automobile
- Smaller streets in grid patterns
- Shallow front yards with porches
- Greater efficiency of public infrastructure
- Reduced energy consumption
- Multiple-use development in compact neighborhoods
- A vital town center

Neotraditional developments are still seen as a small niche rather than as an evolutionary step in conventional development (Anderson **year**).

Green Development

Also incorporating many of the key elements of smart growth, green development adds emphasis on energy efficiency and low toxicity; for example recommending residences be oriented for best solar gain.

Incentives

In addition to regulations mandating certain types of development, incentives can help shape development practices through voluntary changes. Incentives such as density bonuses, streamlined

permitting, and decreased fees are all ways to reward development that incorporates features that improve water quality and enhance smart growth goals.

RECOMMENDED SOURCES FOR FURTHER INFORMATION

General Growth and Planning

A good starting place for community members newly interested in land use planning is *From the Ground Up: A Handbook for Community-based Land Use Planning*. Created by the Hawai'i Chapter of the American Planning Association, it is a good introduction to planning and includes general information on how community members can become involved—but beware, some of the legal details of the California planning system may differ from this Hawai'i-based manual. Contact the APA Hawai'i online at: <<http://apahi.org/~apahi>>.

William Fulton's Guide to California Planning is the premier text used by Humboldt State University's Planning Department. Updated regularly, it is available through Solano Press Books, in Point Arena, California. Information in the textbook is clear, thorough, and easy to access.

Humboldt 2025 General Plan Update website:< <http://www.planupdate.org/>>. The County's Focused Growth Analysis, released December 2004, Humboldt County General Plan Update

Oregon Department of Land Conservation and Development. Oregon's Statewide Planning Goals and Guidelines (Goal 5: Natural Resources, Scenic and Historic Areas, and Open Spaces). OAR 660-015-0000(5). <www.lcd.state.or.us/goalhtml/goals.html>.

Trust for Public Land. Greenprints for Growth. <www.tpl.org>.

Site-level Techniques Implementing Good Development Concepts

Overview of many techniques. *Protecting Water Resources With Smart Growth*, U.S. Environmental Protection Agency, available online at the EPA Smart Growth Web site. <www.epa.gov/smartgrowth>.

Conservation design. Nonpoint Education for Municipal Officials (NEMO) Fact Sheet 9, Home page <nemo.uconn.edu>

Developer oriented development practices. *Best Development Practices Primer*, available online at: <www.epa.gov/piedpage/pdf/BestDevprimer.pdf>.

Cluster development (for water quality). *Introduction to Better Site Design*, Watershed Protection Techniques, 2000.

Livable Communities

Local Government Commission (LGC), and the Center for Livable Communities website (home page): <www.lgc.org> The LGA and the Center offer information and publications including:

Creating Great Neighborhoods: Density in Your Community, September 2003.

Street Design Guidelines for Healthy Neighborhoods, January 1999.

The Funders' Network works to strengthen funders' abilities to support organizations working to build more livable communities through smarter growth policies and practices. For more information, visit www.fundersnetwork.org.

Smart Growth

Smart Growth America. <www.smartgrowthamerica.org>.

Smart Growth Network. <www.smartgrowth.org>.

U.S. Environmental Protection Agency. Smart Growth Policy Database. <cfpub.epa.gov/sgpdb/sgdb.cfm> and Smart Growth Web site. <www.epa.gov/smartgrowth>. Available through the smart growth website are various publications including:

“What is Smart Growth?” April 2001, EPA 231-F-01-001A.

Our Built and Natural Environments. January 2001, EPA 231-R-01-002.

Minimizing the Impacts of Development on Water Quality. June 2003.

International City/County Management Association and Smart Growth Network. <www.epa.gov/smartgrowth/publications.htm>. Available through the smart growth website are various publications including:

Why Smart Growth: A Primer.

Getting to Smart Growth: 100 Policies for Implementation.

Getting to Smart Growth II: 100 More Policies for Implementation.

Best Management Practices

Stormwater Manager’s Resource Center. <www.stormwatercenter.net>.

National Stormwater Best Management Practices Database. <www.bmpdatabase.org>.

U.S. Environmental Protection Agency. Urban Stormwater Best Management Practices Study. <www.epa.gov/ost/stormwater>.

U.S. Environmental Protection Agency. National Menu of Best Management Practices for Storm Water Phase II. <cfpub.epa.gov/npdes/stormwater/menuofbmps/menu.cfm>.

Education/Training

Nonpoint Education for Municipal Officials (NEMO). Home page. <nemo.uconn.edu>. Available through this home page are numerous fact sheets, technical papers, and other materials related to resource protection and pollution prevention. Several examples of NEMO educational materials are in Appendix C, Attachments 7C and 8C.

The National Center for Smart Growth Research and Education. Education & Training <www.smartgrowth.umd.edu/education/default.htm>.

Low Impact Development

The Low Impact Development Center. <www.lowimpactdevelopment.org>.

Low Impact Development Urban Design Tools. <www.lid-stormwater.net>.

U.S. Environmental Protection Agency. Low Impact Development Web page. <www.epa.gov/owow/nps/lid>.

Watershed Management

Center for Watershed Protection. <www.cwp.org>.

U.S. Environmental Protection Agency. Watersheds. <www.epa.gov/owow/watershed>.

California Resources Agency, 2004. *California Watershed Assessment Manual*. <<http://cwam.ucdavis.edu>>

New Jersey Department of Environmental Protection. Municipal Stormwater Regulation Program. <www.state.nj.us/dep/dwq/municstw.html>.

U.S. Environmental Protection Agency. Model stormwater ordinances. <www.epa.gov/owow/nps/ordinance/stormwater.htm>.

Incentives

State of New Jersey. Smart Growth Infrastructure Tax Credits Web site. <www.state.nj.us/budget02/smarttax.html>.

V. LAND USE CONCLUSION

Determining the relative priorities of the community is a longer process than the current Lindsay Creek Project was able to achieve. What the project did accomplish is the identification of issues and the initiation of the community dialogue that will enable relative priorities to be selected.

The Land Use Appendix and its attachments, as well as the *Strategy* and other appendices, provide the community and area planners a compilation of technical data and land use-related suggestions. Equipped with this information, residents will have a tangible opportunity to proactively consider what, where, and how they build to ensure that new development enhances what they already have and fits what they want their community to be. This information can then be used in an “official” planning process, be it the current GPU or a future update of the area’s Community Plan.