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# Protecting Sensitive Lands

## What are sensitive lands?

► **“To people living along the Wasatch Front and Back, peace of mind is largely based on an appreciation for the scenic beauty and recreational opportunities of the natural landscape.”**  
**(Wirthlin Worldwide, 1997)**

**W**hen the Mormon pioneers arrived in the Valley of the Great Salt Lake in 1847, they brought with them a commitment to careful community building. The urban center, it was believed, must nurture social interaction and the survival of each community was dependent upon a harmony between the town and the surrounding countryside.

Agriculture, water and wildlife resources were vital to existence, and they were respected and cared for. Pioneer communities were nestled in the valleys and deserts throughout Utah and the Mountain West, but the greatest concentration and density of growth has occurred in the Greater Wasatch Area. As home to 80 percent of Utahns, the Greater Wasatch Area sets the stage for the quality of our urban environment and ultimately for the quality of our lives.

Therefore, it is not surprising that the threat of encroachment by urban development on the natural environment is greatest in the Greater Wasatch Area. Some of the agricultural land in Utah is here and is disappearing rapidly under concrete and asphalt. Watersheds, floodplains and wildlife habitat are also continually threatened by development.



**A remnant of the rural way of life in Park City.**

► **The issue of how to protect Sensitive Lands is covered in detail in "Land Conservation in Utah-Tool Techniques and Initiatives," a report published in 1997 by the Governor's Office of Planning and Budget. Contact GOPB at 801-538-1556 or on the Internet at [www.governor.state.ut.us/planning/critical lands](http://www.governor.state.ut.us/planning/critical lands).**

**Some potential land hazards in the Greater Wasatch Area.**

Citizens who participated in the Envision Utah process identified the protection of natural and environmentally sensitive lands as one of their primary concerns regarding growth in Utah. This reflects the strong feelings of many residents that the protection of sensitive lands should be elevated to a more prominent role in Utah planning. For this reason, sensitive lands protection is central in the Quality Growth Strategy.

Sensitive land includes any area in which development is either not appropriate or must be approached with care to ensure there is no long-term loss of property or human life. Sensitive land also refers to areas with exceptional eco-

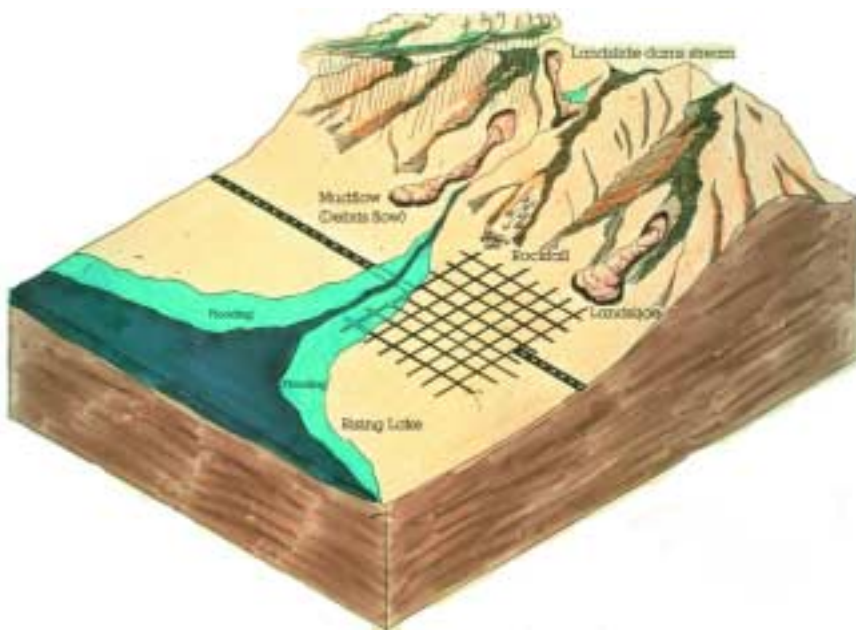
logical, open space or agricultural value. Concern for sensitive lands in community planning will help protect life and property from natural hazards and environmental areas from destruction, preserve air and water quality, reduce soil erosion and preserve an important part of our quality of life – the scenic beauty that surrounds us.

### Types of sensitive lands/strategies

For the purposes of this workbook, sensitive lands are divided among three general categories:

- **Natural Hazard Areas** present a danger to humans when developed;
- **Environmentally sensitive areas** have important ecological features that often are disrupted by development;
- **Open space and agricultural land** possess cultural, aesthetic or economic importance that can be lost when developed.

These categories are not mutually exclusive. Hazardous lands, for example, also can be environmentally sensitive and beautiful as open space.



## Natural Hazards

There are three types of hazardous lands covered in this workbook: (1) geologically hazardous land subject to slope failure, (2) land subject to flooding, and (3) land subject to wildfire. Maps and data often can identify these areas along the Wasatch Front and Back. Available maps and data can be accessed through the Quality Growth Efficiency Tools (QGET) land-use database. The database is included with the Envision Utah publication “Model Codes and Analysis Tools for Quality Growth.”

### Geologic hazards

The primary geologic hazard addressed in this workbook is slope failure or landslides. Earthquake hazards such as liquefaction and ground-shaking also exist, but because these events are geographically widespread, they typically are addressed through building code requirements that ensure structures are designed and retrofitted to withstand earthquakes.

On the other hand, slope failure and rock fall usually occurs in well-defined areas and on lands with predictable land characteristics. Land-use regulations based on slope were first established in Los Angeles in the 1950s and since have evolved in a number of different directions. In this workbook, we will discuss ordinances that limit or prohibit development on those portions of land that exceed a certain slope, usually 25 to 30 percent grade.

Because of the varied geology, soil structure and vegetation cover of the Greater Wasatch, many areas have potential for slope failure. Many local governments prohibit or greatly limit development

► **Building roads across land with a slope greater than 30% involves large and increasingly complex land disturbance.**

**To protect hillsides against scarring cut and fill, areas over 30% slope are often restricted from development, and slopes over 15% are frequently regulated.**



**Slope failure claimed 60 homes in Kelso, Washington, in 1998.**

on slopes over 30 percent grade, due to both slope failure and erosion hazards. In addition, both ancient and active landslides are known to exist, and many have been mapped (see the QGET land-use database for the best available information). Several tragedies have occurred resulting in loss of property and lives due to development on known or suspected slope failure areas. While modern engineering often can lessen the risk, often the best strategy is to eliminate or reduce the number of structures developed on these lands. Slope failure can rarely be prevented through engineering techniques. Tragic consequences sometimes occur when development is located on inappropriate land.

### Construction with inappropriate erosion controls.



## STRATEGIES FOR SLOPE FAILURE AND EROSION LANDS

Codes that address slope failures center on two strategies: limiting or restricting development on steep slopes, and reducing erosion. When sloped terrain is excavated, disturbed or altered for road cuts, it becomes particularly susceptible to debris flows and other forms of landslides. Following is a list of tools that communities have used to plan effectively for geologically hazardous lands:

- Some municipalities increase minimum lot sizes or decrease density (units per acre) as slopes increase in steepness. Ogden is one such city.
- Development should leave a minimum percentage of the site undisturbed and full of vegetation.
- Disturbed areas should be replanted with erosion-resistant or indigenous plant materials within a specified time.
- Drainage control also is an important way to guard against erosion and slope failure. Roof, driveway and parking drainage should be directed and controlled to guard against erosion.
- All cuts and fills should be designed to be stable. This can be difficult on sloped land; often a stabilizing wall is a better strategy on a cut and fill area than a sloped fill.

## Flooding hazards

Floods have been the bane of many urban areas for much of human history, as some of the best places to urbanize often were the floodplains of major rivers and lakes. Certainly, Utah has not been a stranger to flooding, with several memorable events during our short history in this area. The Greater Wasatch is not only subject to stream flooding, but also is subject to the fluctuating shorelines of the Great Salt Lake and Utah Lake. Both of these lakes have relatively shallow depths such that, in wet years, the waters of these lakes can cover an area much larger than their typical shoreline.



After decades of mounting national losses due to continued development in floodplains, the federal government enacted a flood insurance program in 1968 (*the National Flood Insurance Act*). Under this program, the federal government offered to underwrite flood insurance in exchange for local governments enacting some basic regulations on flood hazard reduction. The Federal Emergency

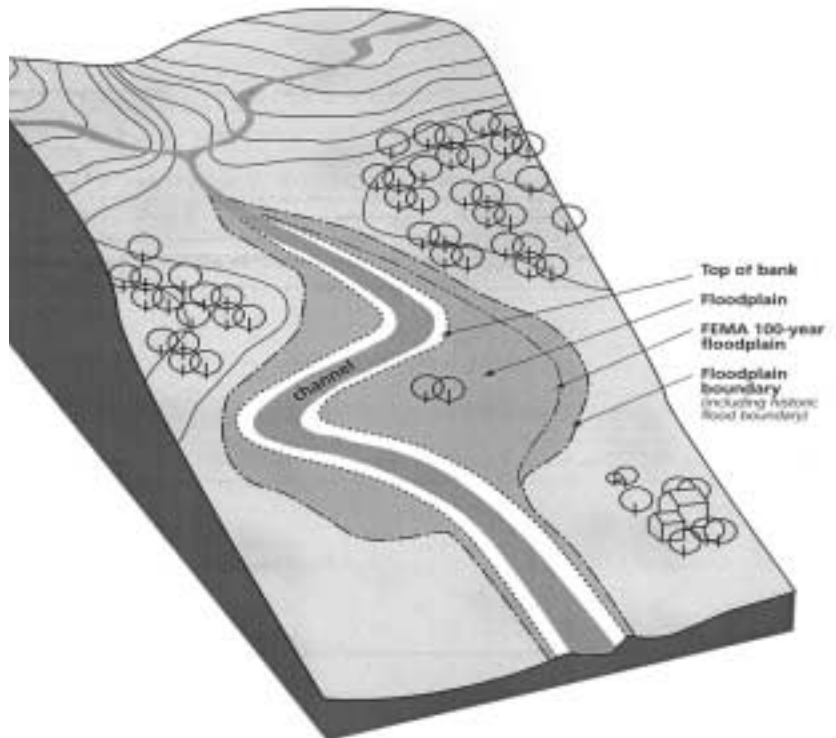
Management Agency (FEMA) wrote a model flood hazard ordinance that could be enacted in any city or county in the country. In exchange for adopting and enforcing the flood hazard ordinance, FEMA would certify the community as eligible for flood insurance.

In the 1970s and early 1980s FEMA also conducted hydrologic studies for most of the drainages in the country – a massive undertaking, considering the state of computer technology at the time. The maps are called Flood Insurance Rate or FIRM maps.

► **Salt Lake City’s Lowland Conservancy Overlay District establishes minimum setbacks and a “natural vegetation buffer strip” around waterbodies and wetlands.**

**Contact Salt Lake City planning at 801-535-7757.**

**Various flood area definitions.**



The FEMA flood hazard ordinance is a baseline nationally – a code that works for many communities all over the country despite their varied circumstances and needs. Most communities in Utah also have adopted the FEMA minimum standard.

However, FEMA recently recognized that the standard flood hazard ordinance and the FIRM maps are not the ideal for many communities. The official maps do not always delineate land that has experienced historic flooding. In addition, many communities want stricter development regulations in flood-prone areas. They have come to the decision that building homes and businesses in areas

known to flood is a fundamental planning mistake that can be avoided with better subdivision and building designs.

In Utah, floodplains are relatively small in comparison to those of the Mississippi or Ohio rivers, and alternatives can be found to allow reasonable development and still protect the floodplain. Therefore, many communities in Utah have adopted regulations that, in lieu of floodplain development, limit floodplain fill and restrict the placement of new structures.

In addition to preventing property damage, restricting development in floodplains serves many other important functions. These include water recharge, protection of wildlife and riparian habitat and flood water storage.

Recognizing the value of keeping floodplains undeveloped, FEMA has created a community rating system to provide for lower flood insurance rates in communities that exceed the FEMA minimum standards. Communities can demonstrate that they exceed FEMA standards by engaging in activities such as mapping areas not shown on the FIRM, preserving open space, enforcing higher regulatory standards and managing stormwater.

**Downtown Salt Lake City, 1983.**



## STRATEGIES FOR FLOOD-PRONE AREAS

Local governments often restrict fill within the floodplain through a variety of methods:

- Balance cut and fill whereby the overall flood-storage capacity of the floodplain remains constant.
- Limit fill only as is necessary for construction of permitted structures.
- Limit the total amount of permitted fill per site.
- Specify permitted locations of fill on a site. For example, designate fill for the portion of the lot furthest from the floodplain.

Regulations also center on ensuring all structures are adequately protected from recurrent flooding:

- Buildings may be required to be flood-proofed to within a specified height of flood events. Flood-proofed buildings allow no water to enter below the flood-proofed height. This typically means that at or below the specified elevation there are no entryways or windows or no habitable space.
- Codes also can restrict building siting to non-floodplain lands or to portions of the lot with the shallowest potential flooding.
- Minimum buffers or setbacks from water bodies also may be used. Buffers should be established based on the capacity of the water body and the slope of the shoreline.
- Some codes also limit construction of fences in floodplains so that they do not collect debris or obstruct flood waters.

## Wildfire potential

Another hazard often found in the Greater Wasatch Area is wildfire. Ironically, many of the natural ecosystems in this area evolved with and rely upon the periodic natural occurrence of fire – or at least certain types of fire.

Frequent, small wildfires tend to clear the ground of fuel preventing the buildup of vegetation which could produce a fire large enough to threaten large, mature shrubs and trees. Small fires also help some plant species germinate, and reduce competing vegetation. Since the pioneers settled Utah, there are fewer small wildfires and, as a result, more large and threatening fires. In addition, development in the foothills and sloped areas has made both property and life subject to catastrophic damage due to wildfire.

► **Tragic wildfires have recently occupied national headlines. The May, 2000, Los Alamos wildfires in New Mexico destroyed 200 homes.**

**The Jordan River in West Valley.**



► **The Utah Department of Natural Resources, Division of Forestry, Fire, and State Camps has wildfire hazard ratings as a reference. 801-538-5555**

Areas subject to dangerous wildfires can be identified easily, and strategies to manage wildfire hazards are well known. One of the most common wildfire prevention strategies is to remove vegetation. This, however, may conflict with erosion and wildlife management goals, and vegetation tends to naturally return over time. For these reasons, wildfire management is an ongoing commitment.



**A July, 2000, wildfire burned these strands of scrub oak, narrowly missing homes in Bountiful.**



### STRATEGIES TO ADDRESS LANDS SUBJECT TO WILDFIRE

There are a number of steps that can be taken to prevent or greatly reduce the incidence of wildfires as a land-use hazard. The following steps should be taken at the time of permit application for such development actions as subdivisions:

- The property owner may be required to remove dead, dying and severely diseased vegetation.
- The owner may be required to reduce the interlocking canopy of trees to diminish the likelihood that a fire will spread.
- Adequate emergency access is especially important in foothill areas subject to wildfires. Roads and driveways should be sufficient for emergency vehicles to access and suppress wildfires.

## Preserving A Healthy Environment

One of the biggest issues in urban development in the coming years will be identifying and managing areas that have environmental significance. Historically, environmentally sensitive areas have been destroyed to make way for development. Wetlands have been filled, streams buried or turned into culverts and lakeshore areas filled and reclaimed. However, in the last few decades, Utahns have become more aware of the value of a healthy natural environment, and many communities have tried to enact land-use codes that call for a balance between the natural environment and urban areas.

Similar to the management of hazardous lands, an excellent strategy to address environmentally sensitive lands is to create a comprehensive map of areas that are known to, or may, have environmentally sensitive characteristics. In addition, some of the most

effective codes, while clearly spelling out the rules for protecting these areas, also allow for a reasonable amount of development. On the other hand, code language tends to be ineffective when environmental areas are loosely identified and policy standards are vague. In this type of system, communities must make ad hoc decisions about the applicability of code language when each development is reviewed. Sometimes the result is that too much protection is given to insignificant resources and too little afforded to valuable areas.

► **Park City’s Sensitive Lands Ordinance protects prominent ridgelines from development that would impact scenic views.**

**Contact Park City Planning at 435-615-5056.**

**Oquirrh Mountains east of Tooele.**



► **Salt Lake City’s “Groundwater Source Protection Overlay District” establishes criteria for regulating the use of substances that pose a contamination threat to groundwater. It also outlines proper sewage and stormwater management in important recharge areas.**

**Contact Salt Lake City Planning at 801-535-7757.**

Generally speaking, environmentally sensitive lands can be divided into four categories:

- 1] Riparian areas – lands adjacent to streams and lake shores;
- 2] Wetlands – areas that have characteristic vegetation and soil formed by long periods water-saturated soil;
- 3] Wildlife habitat – where important species depend on a particular habitat for food and cover;
- 4] Groundwater recharge areas.

### Riparian and lake shore areas

“Riparian” refers to those areas that are adjacent to streams and lakes; often, it refers to floodplains, wetlands and natural habitat found within those areas. Riparian areas are beneficial to water quality when they are preserved and when the streams are lined with natural vegetation. These areas, especially when vegetated, provide stream bank

stabilization (reducing erosion), shade the water (which reduces water temperature), and filter and retain stormwater flowing across the stream buffer. Many studies have been done on the appropriate width of stream-side development buffers and most jurisdictions have adopted 25 - 100 foot buffers. Often the buffer width varies depending on the size of the stream or the area drained by the stream.

### STRATEGIES TO ADDRESS RIPARIAN AREAS

Generally, riparian areas should be subject to the same code requirements applied to floodplains. Some exceptions to this rule include:

- Placing an emphasis on the preservation or restoration of streamside vegetation. Often the removal of vegetation is quite restricted, or restoration required, in the riparian buffer area.
- The percentage of disturbed land in riparian areas should be much more restrictive than for a floodplain – a maximum of 10 percent lot disturbance.
- Possibly require disturbed areas to be restored with native vegetation.

**The shore and adjacent wetlands of the Great Salt Lake are a key stopover for migratory birds.**



## Wetlands

Wetlands are recognized nationally as valuable environmental resources. This represents a change of attitude of historic proportions when one considers that wetlands once were viewed as useless nuisances. Wetlands are now valued for their ability to provide crucial habitat, filter water, provide for storm water retention and recharge groundwater.



The national enforcement of wetland laws is conducted by the Army Corps of Engineers. In most cases it is sufficient to preserve the benefits identified above. However, it is important that local codes identify and allow for the replacement of lost wetlands, as the national laws can be much more effective and less onerous if they are coordinated with local land development codes. The QGET database outlines wetlands identified in the National Wetlands Inventory.

In addition, it is important for wetlands to be inventoried as much as feasibly possible. Some communities have established something called “wetland banks,” where small insignificant wetlands in important development areas are filled, and new wetland areas are created in larger contiguous areas. Large, contiguous wetlands are often more viable than many small wetlands.

## Wildlife habitat

Important wildlife habitat includes wetlands and riparian areas as well as upland areas such as foothill habitat. Some of the most important wildlife habitat areas to preserve in the Greater Wasatch Area are the seasonal habitats used by migratory animals. The shore and adjacent wetlands of the Great Salt Lake serve as a key stopover on one of the most important migratory routes for waterfowl. Many species’ existence depends on the continued health of these habitats. While encroaching urban areas are not the only threat to these habitats, sensitive lands protection would greatly help preserve these migratory species and also provide the added benefit of nearby wildlife that many Utahns value.



**Elk depend on the continued health of upland habitat.**

► **Salt Lake County's Foothills and Canyons Overlay Zone is a very good example of a comprehensive approach to protecting sensitive lands and habitat located on hillsides.**

**Call Salt Lake County at 801- 468-2000 for information.**

In addition to avian habitat, winter range for elk and mule deer is also important. If the winter range is reduced, the herds will become stressed and reduced in size. This is a problem that is subject to cumulative effects. Most urban developments, taken one at a time, do not have a severe effect on winter range. Several hundred developments, built over a decade, can devastate a herd.

Many important known wildlife habitat areas in the Greater Wasatch Area have been identified. QGET has maps of these wildlife habitats, and communities working on plans should get the best available data on these wildlife areas before conducting planning for future development.

## Open Space, Agriculture and Our Quality of Life

### Protecting agricultural lands

**A**gricultural lands are valued in Utah for many reasons – their beauty, their contribution to the economy and their value as open space and buffers from other uses. In addition, Utah has a unique bond to the productive land of the Wasatch Area. Agricultural areas have a prominent place in the history and culture of Utah communities. Agriculture enabled Utahns to be self-sufficient in the early history of this region – the pioneers truly created a garden in the desert.



**Farmland in Morgan County.**

Agricultural lands protection is often controversial due to a frequent misunderstanding of agricultural issues. An important aspect to remember about agriculture is that it is a business and, as with any business, profit is essential for its continuance. Residents who move into agricultural land because of its bucolic nature often are disturbed by the necessities of modern agriculture: around-the-clock harvesting, manure spreading, pesticide and herbicide spraying and the presence of strong odors and flies. Meanwhile, suburban residents can disrupt the business of agriculture by clogging roads with traffic, making the transport of agricultural equipment difficult and hazardous, owning dogs that harass livestock and filing nuisance complaints against farmers.

It also is important to understand that a farmer's land is his primary capital asset after a lifetime of work. Urban residents value the open space that agricultural land represents, but zoning that restricts land use to agriculture only is often resisted by the farmer if the land can be sold for urban development, as that will maximize the return to the farmer.

There are several recommended methods for preserving land for agricultural use. One method is for local governments, especially counties, to adopt zoning codes that allow and encourage the preservation of agricultural businesses. This approach differs from many agriculture-related zoning strategies that aim to protect suburban residents from the nuisances of agricultural business, rather than protecting farmers from negative and disruptive suburban impacts.

**Hi-Ute ranch in Summit County.**



- **Zoning that seeks to protect suburban residents from the noises and smells of modern farming undermines agricultural business.**

### Protecting agricultural business

The more profitable farming remains, the more farmland will be preserved. One method to protect agricultural business is to permit ordinary agricultural operations and allow the vertical integration of the processing and sale of products by the farmers in the same zone. To survive, many small farmers have found that they must process and sometimes sell their products in addition to growing them. In this way they retain the profits otherwise collected by middlemen. With Utah's small average farm size and large number of health conscious residents, specialty farming holds great potential for vertically integrated farms. Specialty farming provides high quality or niche products to the local community.

### ZONING STRATEGIES

Zones that are flexible with regard to land-uses that are supportive of the agricultural industry help maintain the profitability of agriculture. Permitted uses in ag-friendly zones may include food processing and storage as well as farm equipment and supply stores.

Zoning can also allow or conditionally allow uses that help farmers supplement their farm income without compromising aspects of the farm economy. For example, bed and breakfasts and restaurants can be complementary to farming and help the rural economy stay viable.

## CONSERVATION EASEMENTS

- **In Utah, Conservation Easements are one of the most widely used tools to protect sensitive lands. A Conservation Easement is an outright purchase of development rights between a willing seller and a willing buyer, although sometimes landowners choose to donate their development rights. In exchange for donating or selling the development rights, a conservation easement is placed on the land. The landowner still owns the land, it can still be used for agricultural or other purposes, but additional development is limited or restricted entirely. In exchange for selling or donating development rights through a conservation easement, a landowner receives a significant tax benefit as a result of lower property tax valuation.**

**The Utah Legislature saw the value in this approach to Land Conservation when it passed the Quality Growth Act of 1999. This Act created the Leray McAllister Fund, with over \$3 million appropriated annually for Land Conservation through Conservations Easements. These projects must have a local partner and the State dollars coming from the McAllister Fund must be partnered with other private sector or local government funds. Over a dozen projects have been funded to date using this mechanism and fund.**

**For information contact the Governors Office of Planning 801-538-1556.**

## Clustering development

Another strategy to protect agriculture is to preserve large contiguous tracts of land by encouraging the clustering of development. Communities often attempt to preserve agricultural land through low density zoning. Large-lot zoning often is not enough to maintain farming uses because this approach is ineffective in preserving contiguous tracts large enough to allow *some* farming to be viable. On the other hand, development clustering is more effective in preserving contiguous tracts with their intrinsic open space aesthetic appeal. However, clustering alone is not sufficient to preserve *healthy* agricultural business operations which require very large unbroken tracts of land. The farmland preserved by clustering alone is typically useful only for marginal farm uses, such as pastures or truck farming. Clustering provisions and very low-density zoning (as opposed to very large minimum lot sizes) together provide the potential for a viable farming economy.

## ZONING STRATEGIES

- Clustering helps preserve farmland for open space and at least marginal agricultural use. One regulatory technique to enable clustering is to provide maximum density requirements in lieu of minimum lot sizes.
- Clustering can be encouraged through the use of density bonuses. Density bonuses may be given in exchange for dedicated open space, for land held in a common undivided interest or if the land is dedicated to a recognized land trust. One example is a 60 percent increase in density in exchange for 50 percent open space. Often such density bonuses are only made for relatively large developments of, say, 50 acres or more.

**Rural clustering is in the foreground, scattered development is in the background.**



► **Effective TDR systems designate receiving zones in areas where market demand is well above zoned allowable densities. Examples of such TDR systems are in Boulder, Colorado, and Thurston County, Washington.**

## Transfer of development rights

One method that has been used to protect agricultural lands and other open space is a Transfer of Development Rights (TDR) system. Several other states have TDR programs that have been in use for two decades or more. In Utah, West Valley City recently has adopted a TDR process; development rights from a 600 acre wetland sending area may be relocated to most parts of about half of the city. In a TDR system, an area to be protected is designated as a “sending area” and is zoned for agriculture or some other open space use. A “receiving area” is established in the same jurisdiction. Development rights can be purchased from a property owner in the sending area and used in the receiving area. By buying the development rights from a farmer, a developer can achieve a higher density in the receiving zone than otherwise would be permitted. The beauty of a TDR system is that the compensation amount is determined privately between the property owners involved – and the result is permanent protection of the farmland.

## ZONING STRATEGIES

■ Codes must establish sending zones (land to be protected), and receiving zones (those areas where additional development is desired).

■ Transfers work best when development rights are exchanged privately. Normal development reviews are followed and development credits are tracked, but exchange prices and transactions are negotiated privately so as not to encumber the exchange process.

■ Transfer of Development Rights can be established between jurisdictions as well as intra-jurisdictional. Similar ordinances must be adopted in both jurisdictions with an inter-governmental agreement.

■ A maximum receiving zone density should be established to prevent incompatible densities.

■ Examine receiving zone requirements that limit densities to ensure that transferred development rights do indeed increase the overall density. Landscaping, setbacks, maximum height requirements and even parking requirements should be examined to determine if they limit maximum densities in such a way that transferred rights cannot increase the density of a development.

## Agricultural protection planning practice

### 1] Designate an agricultural protection area.

Utah Code, Title 17-41-201, provides for Agricultural Protection Areas. According to this law, local ordinances must exclude normal and sound agricultural operation or activities from public nuisance definitions if they are located in “agricultural protection areas.” This legislation helps farmers defend themselves from nuisance claims from encroaching suburban residents. To take advantage of this state law, the city or county government must designate the land as a protection area. Preliminary steps include a signed petition of the majority of property owners in the prospective area.

### 2] Support cooperatives.

Seed money and guidance can help local farmers in your community develop cooperative purchasing, processing, marketing or retailing. Encourage agricultural support businesses. Incentives to attract agricultural support businesses such as seed and feeds and tractor and farm machinery sales and service can help solidify the local farm-based economy.

### 3] Buffer open space.

Used to help avoid conflicts between farmers and their suburban residential neighbors.

### 4] Adopt agriculture-friendly zoning.

Agriculture-friendly zoning outright permits farm uses and also is flexible with other aspects of the farming economy such as processing plants and food and equipment sales.

### 5] Identify areas in the general plan that will not develop within the long-range planning period.

Farmers will not likely make long-term capital investments unless they have an assurance that the farm economy infrastructure will

**Zoning that permits food and equipment sales helps maintain local farming economies.**



last long enough for them to recoup their investment. This tool simply maps the estimated geographic area that will not receive city services and urban development within, at least, the next 20 years.

#### 6] Support and maintain contiguous farming areas.

Suggestions for accomplishing this include land banking, outright purchase of conservation easements and purchasing rights of first refusal for farmland. Up-zoning in response to encroaching urban growth should be done in a way that keeps contiguous areas in farm-friendly or very low-density zones.



#### 7] Develop farmers' markets in urban areas for local agricultural sales.

Farmers' markets offer an advantage to both sellers and buyers by removing middlemen from transactions.

#### 8] Allow rural cluster development, also known as conservation subdivisions.

These subdivisions preserve the rights of property owners in terms of gross density or total numbers of permitted units but protect relatively large contiguous areas for farming. This tool is discussed above under "Clustering of Development."

**A farmer's market is an urban amenity that provides a place for farmers to sell directly to the public.**



## Regulatory Protection

### Limits on protection

**B**efore regulating private property rights, it is important to consider the legal issue of “taking without just compensation.” Under the U.S. and Utah court decisions, regulations can diminish the value of land without constituting a taking if there is a connection between the regulation and the public’s valid interests (a “legitimate public interest”). However, public opinion and the local view of what is fair often act as a more restrictive standard than the technical legal limit of what can be regulated.

Sensitive lands regulations should clearly document the public purpose of the regulation. There often are overlapping reasons for protecting lands, from natural hazards to environmental areas to aesthetics. Regulations should be clear about what is being protected and why. Another safeguard to avoid takings claims is to adopt regulations that establish a clear minimum property right to ensure that each property retains some economic benefit for the owner.

It is important to note that regulations that limit the use of private property can be more restrictive without creating a taking than regulations that require the dedication of property to the public. The legal standards for a dedication of land – even if the land is, for example, on an unbuildable floodplain – are much higher than legal standards for a regulation that restricts development of the floodplain.



**An airphoto is a valuable tool to develop and check a sensitive lands map. This is an aerial photo of a 100 Year Flood.**

### Natural hazard and environmental areas regulatory protection

Regulations for natural hazard or environmentally sensitive areas typically take two different forms in their design. One form is text-based. It operates through text definitions of sensitive land based on land characteristics such as slope or the distance from a stream or hydrologic feature. In a text-based system, when someone applies for a development permit, he or she must conduct a study of these environmentally sensitive characteristics and delineate the land area subject to regulation. Government officials then review the results of these private studies. With some exceptions, this is the way wetlands are regulated by the federal government. It is advisable that the applicant contact the Corps of Engineers prior to beginning design work.

The other type of regulation is map-based. In this system, an official map is adopted and the regulation takes the form of an overlay zone. If an area is defined in the map, it is subject to regulation. Typically, there is a provision to adjust the map based on better data that the applicant may supply. However, if an area is not on the map, it is not regulated – even if it meets the criteria for inclusion (thus the map must be drawn with great care). Floodplains are regulated this way through FEMA's recommended code.

We recommend that the map-based system be used in conjunction with text. This technique gives property owners specific notice of regulatory effects. The maps can be adjusted for minor deviations, for areas where development has already occurred, or for areas where development is more important than protection, such as in a downtown area. This system also allows the overall regulatory impact to be estimated by the jurisdictions. For example, a city can use the sensitive land map to help determine the town's development capacity. This has been discussed more in a separate workbook called the "Model Codes and Analysis Tools for Quality Growth," published by Envision Utah in December, 2000.

### Developing the map

The “Model Codes and Analysis Tools” workbook includes instructions on how to develop a basic sensitive lands map consistent with the zoning strategies outlined in this chapter. This data should serve as only the beginning of a sensitive lands map, which should then be field-checked and reviewed with property owners. Overlaying the map data and taxlot boundaries on an ortho-registered digital air photograph is a very useful technique to review and adjust sensitive lands maps. This technique is possible in most jurisdictions today with minimal effort.

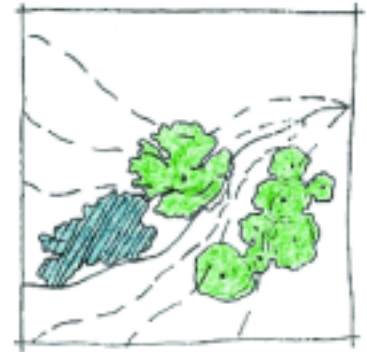
### Zoning and the sensitive lands map

While sensitive lands often are addressed using overlay zones, the underlying zone should be considered as well. Areas with severe constraints should be zoned for low-density development. As the environmental constraints increase, the density should decrease. Clearly there will be

exceptions to this rule, but underlying zoning that permits relatively high development density, which overlay regulations then greatly reduce, often creates conflicts with property owners. Generally, the more sensitive land an area has, the closer the overlay zone should be to the underlying zone in terms of permitted development intensity.

### Density transfers

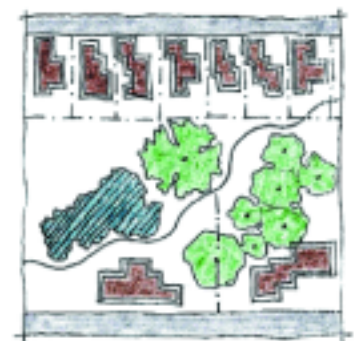
One of the most effective regulatory provisions in mitigating reduced land values is a density transfer system. With density transfers, a property owner has the right to the same number of units and allowable uses, but the units are transferred on the same parcel from more sensitive land to less sensitive land. With density transfers, the owner’s overall development rights are not subject to approval through a discretionary decision-making planning process.



**Existing site has a significant stand of trees and a pond on a steep hillside.**



**Minimum lot size regulations encourage development of uniform lots that ignore the natural characteristics of the site.**



**A density transfer allows a property owner to develop the same number of units on the site while preserving sensitive natural features.**

### Percentage disturbance standards

Some areas do not need to be left completely undisturbed to be adequately protected. For example, riparian areas can survive quite well with some disturbance as long as the developed land is not immediately adjacent to the stream. Recognizing this, some jurisdictions allow a 10 to 30 percent clearing of the outer parts of buffer areas.



**Although we cannot predict or always control lands that are subject to wildfires, we can take steps through the planning process to control the types of development that occur on those lands.**

## Summary

The issue of sensitive lands is something that Utahns cannot ignore. Sensitive lands – whether they are environmentally delicate or pose a hazard to humans – are there for the duration and should be respected for their longevity, as well as for their role in where and how we live. Fortunately, there are ways to mitigate or make compromises that will accommodate both human need to occupy the land and nature’s need to simply be the way it has been for generations. While we cannot predict or always control lands that are subject to flooding and wildfires, we can take steps through the planning process of reducing or controlling the types of development that occur on those lands. Agricultural lands also fit into the category of sensitive lands – primarily because of their special needs, their importance to the area’s economy and the pressures they face as development encroaches near their borders.