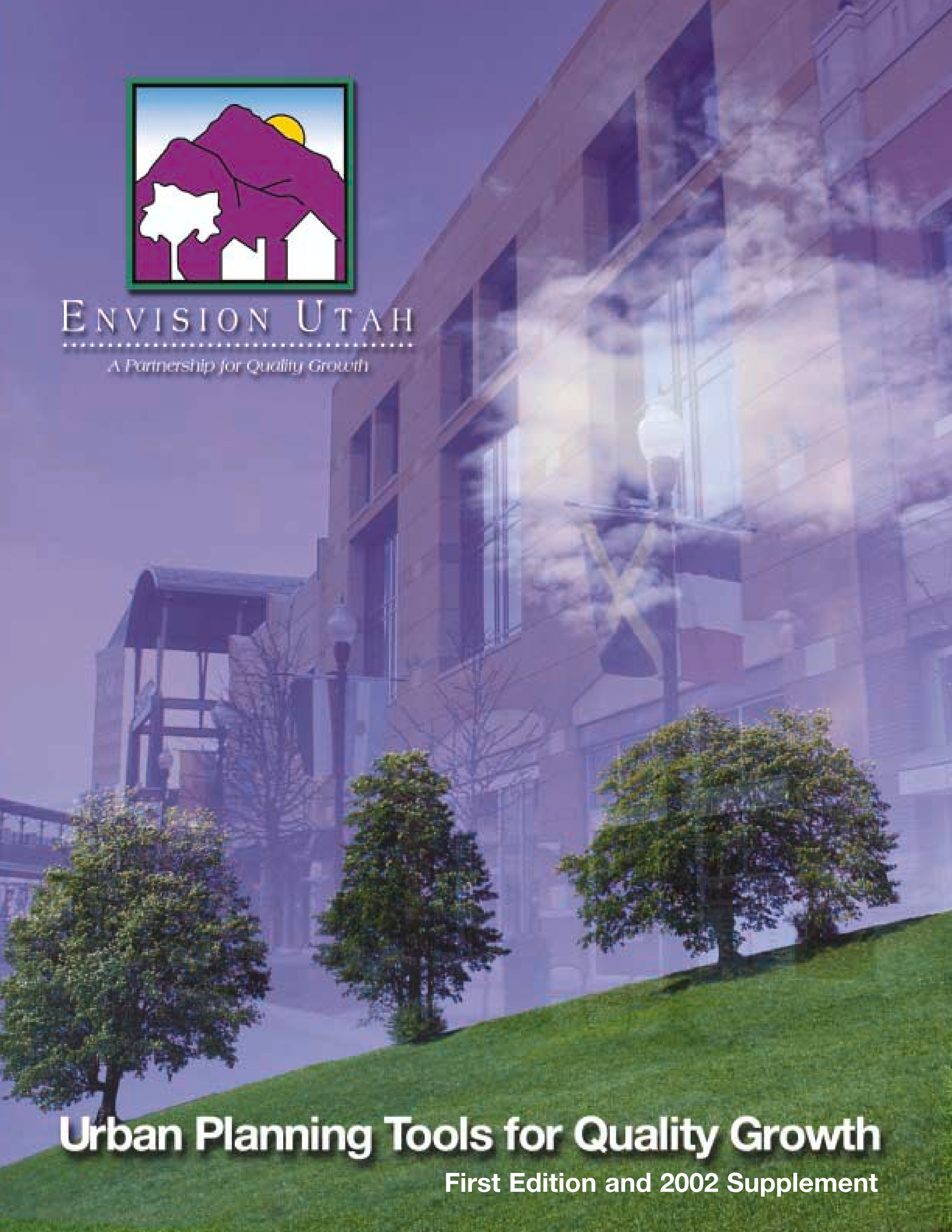

ENVISION UTAH

A Partnership for Quality Growth

Urban Planning Tools for Quality Growth

First Edition and 2002 Supplement

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A Partnership for Quality Growth

Formed in January of 1997, Envision Utah is a public/private community partnership dedicated to studying the effects of long-term growth in the Greater Wasatch Area of northern Utah. Sponsored by the Coalition for Utah's Future, Envision Utah and its partners – with extensive input from the public – have developed a publicly supported growth strategy that will preserve Utah's high quality of life, natural environment and economic vitality during the next 50 years.

The Envision Utah partnership includes state and local government officials, business leaders, developers, conservationists, landowners, academicians, church groups and general citizens. This unique and diverse coalition is working together to implement a common vision for the Greater Wasatch Area as it faces the prospect of immense growth in the coming decades.

The poet Walt Whitman wrote of pioneers as "moving yet and never stopping," a fitting description for those who are embarking on this important journey to make Utah an even more remarkable place. Like most journeys, the twists and turns in the road and the choices made along the way are as important as the final destination. Our ultimate goal is to create an ideal place to live and work, raise a family and enjoy beautiful surroundings.

The quality of human settlements was important to Utah's founders. In 1847, within three days after entering these valleys, a planning commission was convened that created a community plan that would last for generations. In 1892, LDS church President John Taylor wrote, "In all cases in making new settlements, the Saints should be advised to gather together in villages, as has been our custom from the time of our earliest settlement on these mountain valleys. The advantages of this plan, instead of carelessly scattering out over a wide extent of country, are many and obvious…By this means the people can retain their ecclesiastical organizations…Co-operate for the good of all in financial and secular matters, in making ditches, fencing fields, building bridges, and other necessary improvements. Further than this they are a mutual protection and a source of strength…[which]…gives them many advantages of a social and civic character which might be lost, misapplied or frittered away by spreading out so thinly that inter-communication is difficult, dangerous, inconvenient, and expensive." (Mormon Country, by Wallace Stegner)

In building a community today, we do not face the enormous physical difficulties confronted by our ancestors. But the path to improving our communities and the quality of life for our ourselves and our children is nonetheless fraught with difficult decisions and complicated ideas. True, we generally don't have to worry about storing enough food for the winter or fighting back crickets … but we live in a much more complex world, with a spinning array of choices, ideals, opinions, and technology to help us achieve our goals. In other words, we may carry a PalmPilot and rely on modems and six-lane highways, but we are no less pioneers than those who came before us.

This document is a guidebook that outlines tools to take us to a community that, in many ways, echoes back to our past – with its close-knit neighborhoods, tree-lined streets, pedestrian-friendly walkways, nature and farmland within reach of the city, and houses marked by character. The goal may be low-tech, but the best method for getting there definitely is high-tech – thanks to modern advances in planning, transportation and design.

This toolbox is an invitation to build better communities… to become a pioneer who "moves and never stops."

Jon M. Huntsman, Jr., Chair Emeritus
Envision Utah

Envision Utah would like to thank those who financially supported the development of the Implementation Toolbox.

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1 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]

When 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.

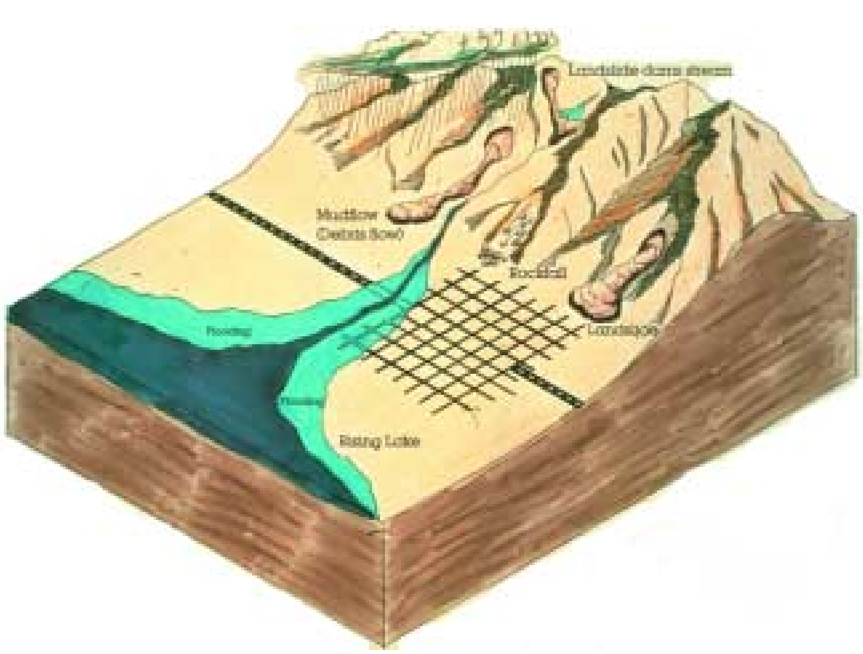
A remnant of the rural way of life in Park City.

▶ **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.**

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 ecological, 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.

Some potential land hazards in the Greater Wasatch Area.



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

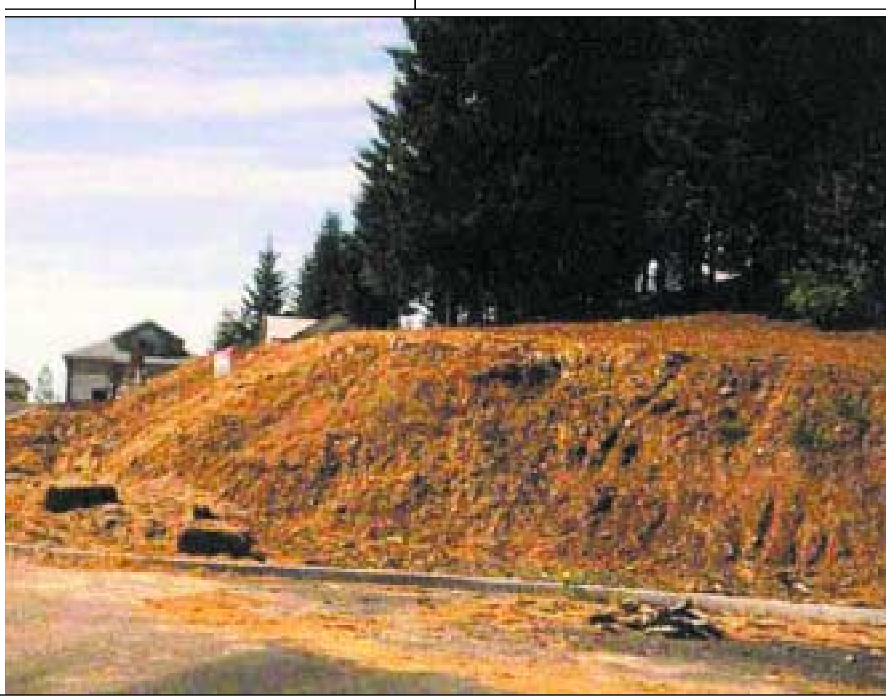
▶ Building roads across land with a slope greater than 30% involves large and increasingly complex land disturbance.

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 EROSIVE 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.

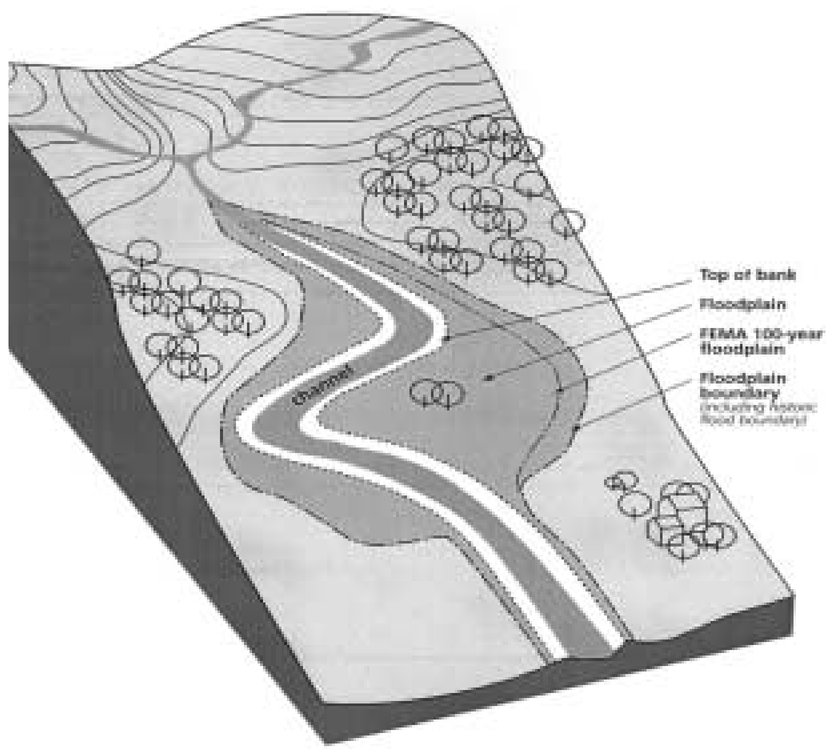
After decades of mounting national losses due to continued development in floodplains, the federal government enacted a flood insurance program in 1968 (*the National Flood Insurance Act*). Under this program, the federal government offered to underwrite flood insurance in exchange for local governments 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.



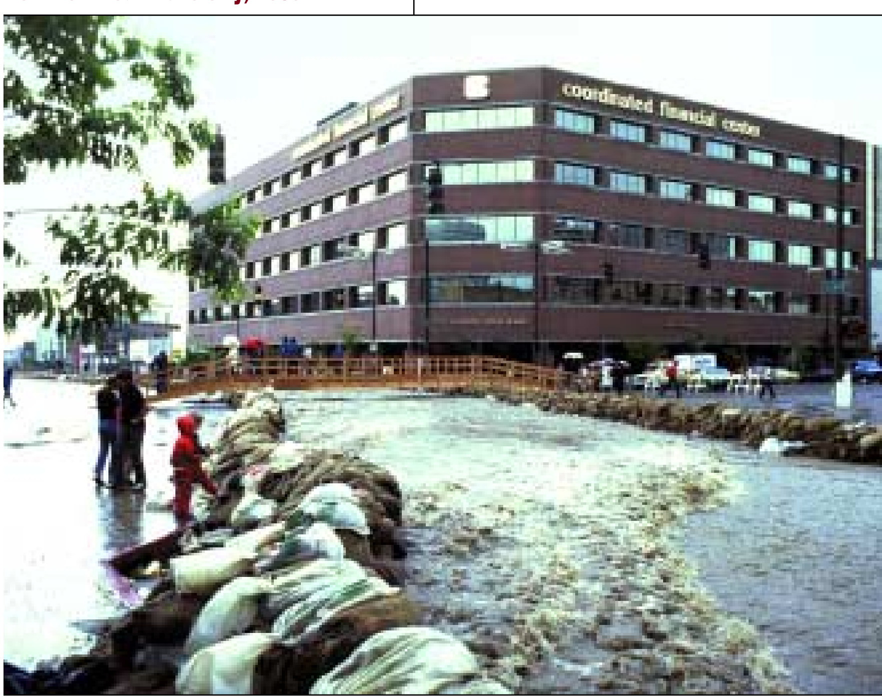
The FEMA flood hazard ordinance is a baseline nationally – a code that works for many communities all over the country despite their varied circumstances and needs. Most communities in Utah also have adopted the FEMA minimum standard.

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

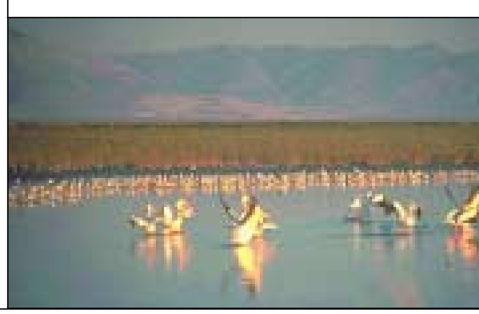
Generally, riparian areas should be subject to the same code requirements applied to floodplains. Some exceptions to this rule include:

■ 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

Agricultural 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.

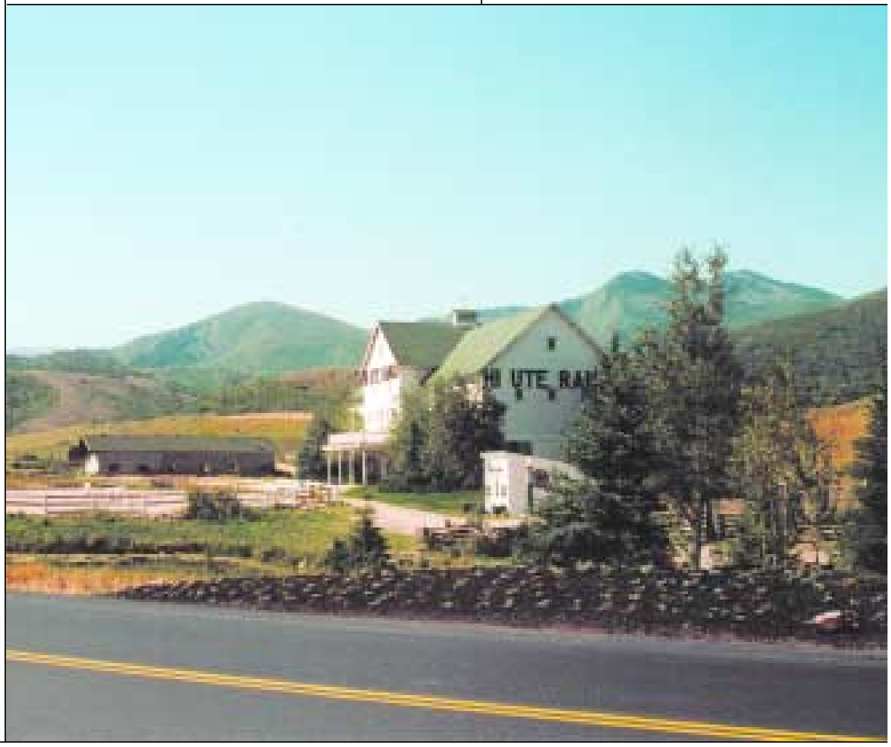
Farmland in Morgan County.

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 intergovernmental 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. Upzoning in response to encroaching urban growth should be done in a way that keeps contiguous areas in farm-friendly or very low-density zones.

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

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."

Regulatory Protection

Limits on protection

Before 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 be 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

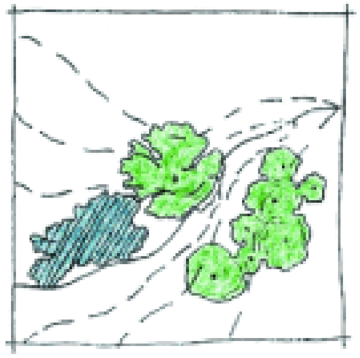
The "Model Codes and Analysis Tools" workbook includes instructions on how to develop a basic sensitive lands map consistent with the zoning strategies outlined in this chapter. This data should serve as only the beginning of a sensitive lands map, which should then be field-checked and reviewed with property owners. Overlaying the map data and tax-lot 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

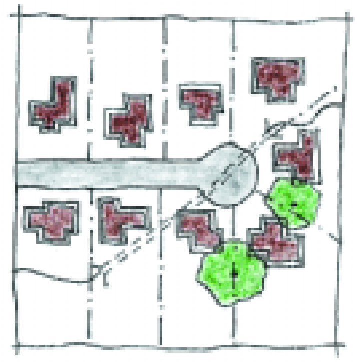
While sensitive lands often are addressed using overlay zones, the underlying zone should be considered as well. Areas with severe constraints should be zoned for low-density development. As the environmental constraints increase, the density should decrease. Clearly there will be exceptions to this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

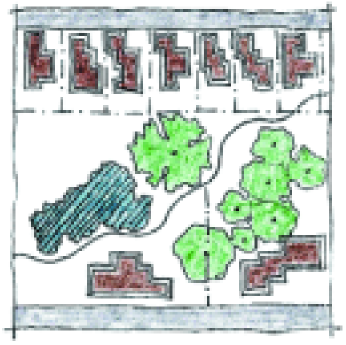
One of the most effective regulatory provisions in mitigating reduced land values is a density transfer system. With density transfers, a property owner has the right to the same number of units and allowable uses, but the units are transferred on the same parcel from more sensitive land to less sensitive 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.

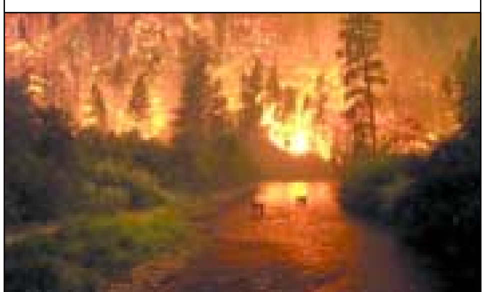


A density transfer allows a property owner to develop the same number of units on the site while preserving sensitive natural features.

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.

2

Meeting Housing Needs

The Role of Housing

▶ **Quality design is paramount for small-lot and yard-free housing to be compatible with standard single-family homes and community expectations.**

Shelter is among the most basic of human needs – we cannot live without it. Yet in most modern societies housing is much more than just shelter – it expresses many cultural values held by the occupants. In addition, a government's laws and ordinances may direct the style and location of housing. In Utah, as in most of the United States, housing is constrained by many local and state laws, contained primarily in zoning and building codes. Where and how new housing is built in turn drives many other aspects of our lives and can create a domino effect of changes and important livability decisions.

One can hardly tell, but a glance at the sign reveals that this building in Bend, Oregon is occupied by a small retail shop on the main floor with a housing unit above.

In the Greater Wasatch area, new housing is frequently built on former farm or ranch lands. Rooftops and pavement are built, which increase storm runoff and create the need for an urban storm drainage system. Modern sewer and water systems must be built. New residents require police, fire-fighting, schools and other services. New roads must be built, since the majority of these new residents will drive to almost all their destinations. This new traffic also will consume available capacity on existing roads, increasing congestion and emitting additional pollutants.

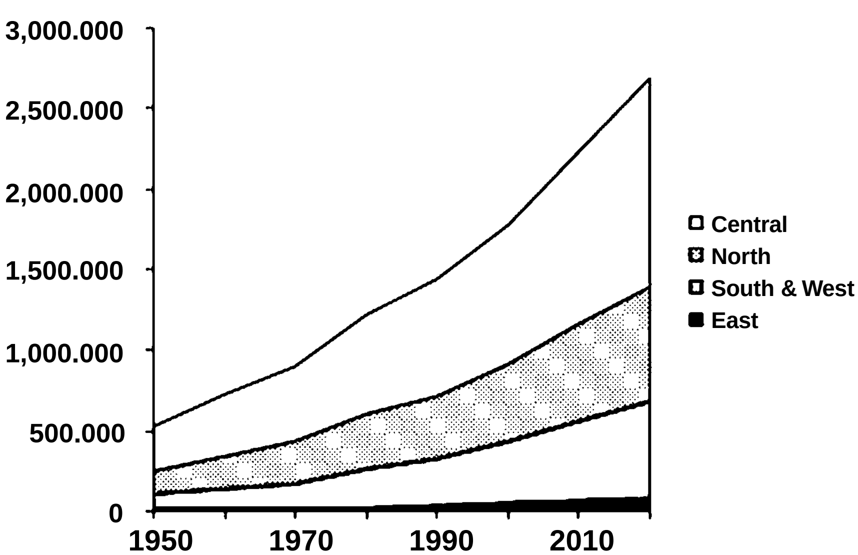
▶ **Greater Wasatch Area population is expected to grow from 1.7 million in 2000 to 2.7 million in the year 2020.**

Considering the impacts, it is not surprising that new housing construction often is the subject of controversy. Neighbors know that it will bring many changes. However, in this chapter, our primary concern is how to use local planning and zoning tools to ensure that the achievement of housing needs is not frustrated by local government regulations. With an eye toward present and future population trends, community leaders and planners can design zoning codes to meet the market demand. At the same time, the codes can ensure that the location of housing in a community is compatible with neighboring uses and avoids the negative impacts of development.

Fortunately, many of Envision Utah's strategies to meet tomorrow's housing serve a variety of other purposes, including: making our transportation system more efficient, reducing the costs of new infrastructure, building walkable communities, conserving open space and restricting development on sensitive lands. However, most of these strategies cannot be put into practice with the zoning and planning systems commonly used today. This chapter covers the methods that can be used to achieve a housing supply that matches the needs of the future population while ensuring compatibility with lower-density housing types. This chapter also outlines how to best use that new housing mix to achieve other goals such as making our community pedestrian-friendly. A pedestrian-friendly community supports neighborliness and is accessible to children and the elderly as well as automobile drivers.

Population in the Greater Wasatch Area by subregion, 1950 to 2020.

[State of Utah Long -Term Economic and Demographic Projections, 1997]



Utah's future population

The Wasatch area has grown rapidly in the last few decades – this should come as no surprise to residents. The region is predicted to continue to grow by 2.2 percent per year. Two-thirds of this growth is expected to come from our children growing up, settling in this area and starting their own families. (*Econorthwest, 1999*)

Utah has a unique demographic characteristic that comes in part from the value we place on having children. The nation as a whole, including Utah, experienced a baby boom after World War II. However, Utah's baby boomers had more children than their non-Utah counterparts and had them earlier in life. The children of Utah's baby boom generation are expected to continue this pattern of relatively large families.

Other national demographic trends also are evident in Utah. There are more single-parent households than in the past, and more people are choosing to live alone. The rise of single-parent and single-person households means that average household sizes are dropping and the number of new households is increasing faster than population.

Single-parent and single-person households also tend to have lower household incomes. (*Econorthwest, 1999*)

Housing choice is a very personal one and there is within each identifiable demographic group a diversity of preferred housing types. In addition, housing choices change over time, as innovations in housing come on the market and achieve success. In short, the kind of housing that is optimal for each person or family changes over time, is different for individuals, and is affected by market innovation.

Income and housing

Other than personal taste and family situation, household location is the most important factor in making a housing choice. As in many aspects of life, people must balance what they would like with what they can afford. Housing affordability is the term used to describe the ratio between a household's income and the cost of the housing. Guidelines from the Federal Department of Housing and Urban Development (HUD) specify that no more than 30 percent of a person's income should be spent on housing. Typical mortgage

▶ In 2000, 43% of households at or below the median income level cannot afford an average home in the Salt Lake City area.

[National Association of Home Builders Housing Opportunity Index]

An example of housing with parking loacated behind.

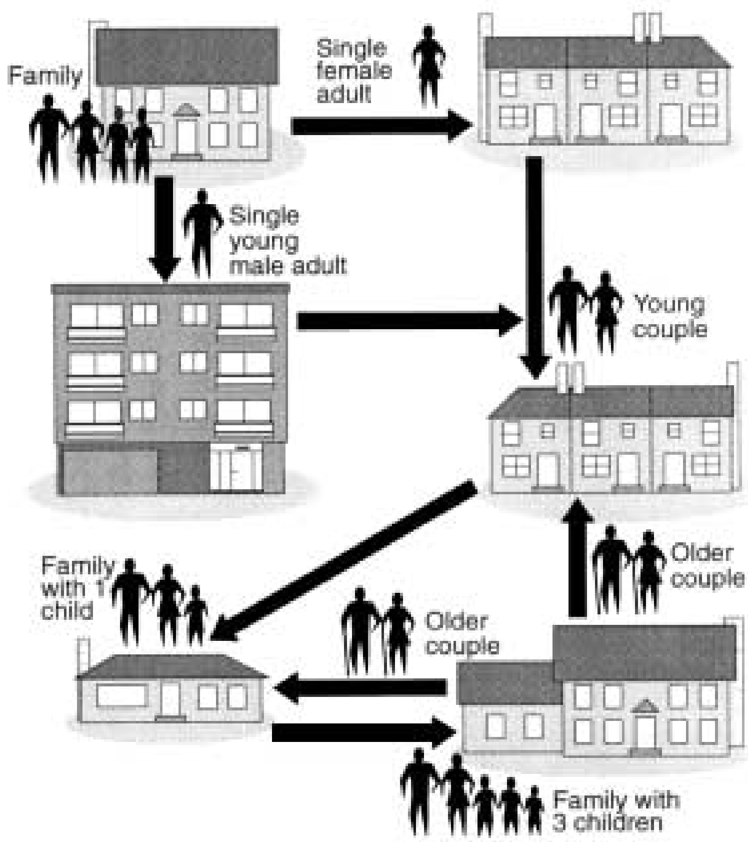
These townhomes are owner-occupied at 12 units per acre.

lending rules limit housing payments to no more than 28 percent of a household's gross income. These limits help define the available choices for housing type and location available to people in the future.

We can then define the probable mix of housing that people will choose in the future, assuming that there is a wide range of housing types available, by looking at what types of housing people in various demographic groups currently select, and comparing these preferences to expected housing costs.

The intersection of life cycles and housing preferences.

[Clark & Dicleman, 1996]



What kind of housing will be needed?

Based on the population forecasts prepared by the state of Utah (Governor's Office of Planning and Budget), the household mix of the Greater Wasatch area will change during the next 20 years. There will be a rise in senior households (head of household over 60 years) from the current 21 percent to 27 percent in the year 2020. Household size will decline from 3.15 people per household in 1990 to 2.78 in 2020. Decreasing household sizes mean the number of new households will increase proportionately faster than the population. Household sizes are expected to decrease as a result of more single-person and single-parent households and fewer two-parent families with children. Assuming that real incomes will remain more or less the same, smaller households mean there will be less demand for large-lot, single-family homes and more demand for smaller, less expensive housing. There also will be more demand for housing types that require minimal maintenance.

The Mismatch Between Housing Needs and Zoning

The problem with zoning

Zoning evolved in the early 20th century as a means to stabilize property values and reduce conflicts between land uses. Zoning's roots are in ordinances that prohibited nuisances, such as the odors and pollutants associated with tanneries or smokestacks. These early ordinances were innovative for the time because they sought to prevent conflicting land uses, rather than trying to remedy them after the fact. Early precursors to zoning listed a few obnoxious uses that were prohibited within any given district. This practice logically led to a map-based system in which the entire city was divided into distinct districts, each with a list of permitted and prohibited uses.

While early codes primarily dealt with separation of industrial and residential uses, it was not long before different classes of residential uses began to be separated from one another. Traditional neighborhoods usually contained a variety of housing types: large family homes, cottages, boarding houses, duplexes and small apartments. Early zoning first separated apartments from other residential areas. Zoning subsequently evolved to separate duplexes and, finally, zones were created that separated single-family homes from one another based on lot size.

Why did zoning evolve into such a detailed division of residential uses? One of the primary reasons communities regulate home type and lot size is that impacts from housing development – especially traffic – sometimes increase with density. Even though region-wide, low densities increase rather than decrease overall traffic and congestion, the local impact of a high-density development can be significant as well. Individual localities focus more on the impacts of individual developments than the regional impact of a generalized pattern of growth.

Senior-oriented housing.

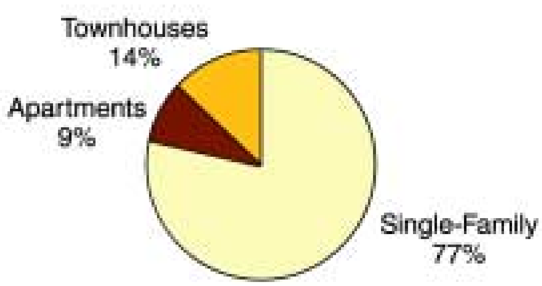
There also is a darker historical reason for the distinction between various housing types. Zoning often was used as an explicit way to discriminate among population groups. People were separated into different neighborhoods based on income, sometimes resulting in divisions among different age groups, ethnic origins and race.

Even when neighborhoods differ from one another due to housing types, an overall balanced housing mix may be achieved. But the pervasive misconception that higher density alone causes crime, pollution and congestion has resulted in entire communities limiting the choice of housing to a very narrow range of options – usually large-lot, single-family housing types.

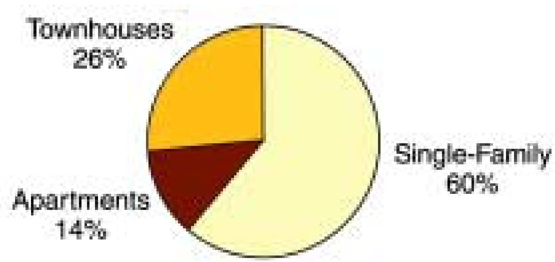
The cost of low-density housing to our communities can be significant. First, overall housing prices are generally higher with less housing within financial reach. Those who cannot afford the higher costs of large-lot, single-family housing – namely the poor, the young and the old – are limited to living in relatively few areas. As a result, they often are forced to travel long distances to their jobs. Driven by negative perceptions of housing types that are different from single-family housing, we are developing neighborhoods and communities that do not respond to the housing choices Utahns would make in an open housing market.

The graph on the left represents the housing supply that will be added between 1998 and 2020 based on current zoning. The graph on the right represents the additional housing units needed to balance total 2020 supply with expected 2020 housing demand based on expected 2020 income and demographic characteristics. [AGRC, FCA, EcoNorthwest, 1998]

Additional housing supply from 1998 to 2020.



Current Zoning



Balanced 2002 Housing Demands

Zoning as a tool to create good housing options

It is speculation as to what housing choices would be without the current zoning regulations that frustrate the housing market. Nonetheless, we do not advocate the removal of zoning because it is an important tool in managing growth. Our recommendation is that each community look at the overall effects of its zoning code and adjust regulations to meet the needs of both those who already live there and those who would live there if appropriate housing choices existed. In addition to providing a better fit between housing supply and demand, this strategy can be used to achieve a walkable community – one that provides a more coherent and efficient community that discourages sprawl and better conserves our resources, agriculture and open spaces.

Envision Utah and QGET's research calculates the additional housing supply from 1998 to 2020 if zoning remains constant in the Greater Wasatch Area (*AGRC, FCA, EcoNorthwest, 1998*):

- 77 percent single-family houses
- 14 percent apartments
- 9 percent townhomes and duplexes

Again, this mix is constrained by zoning and does not represent the housing mix based on expected open-market conditions. According to the same research, the additional housing mix needed to match expected 2020 housing demand based on expected 2020 income and demographic characteristics, an open-market approach would yield:

- 60 percent single-family houses
- 26 percent apartments
- 14 percent townhomes and duplexes

The difference between future supply based on zoning and based on actual housing preferences is not, for the most part, composed of a large deficit in available rental

▶ WHO NEEDS MODERATELY PRICED HOUSING?
Many people need housing that is more affordable including our teachers and policemen, young families buying their first home, single adults and the elderly.

A triplex in Bountiful that resembles a single-family home.

▶ **The Envision Utah Quality Growth Strategy uses existing infrastructure with more efficiency. Compared to the baseline 2020 growth scenario, [the future based on current trends], the Quality Growth Strategy reduced total infrastructure cost by $4.5 billion.**

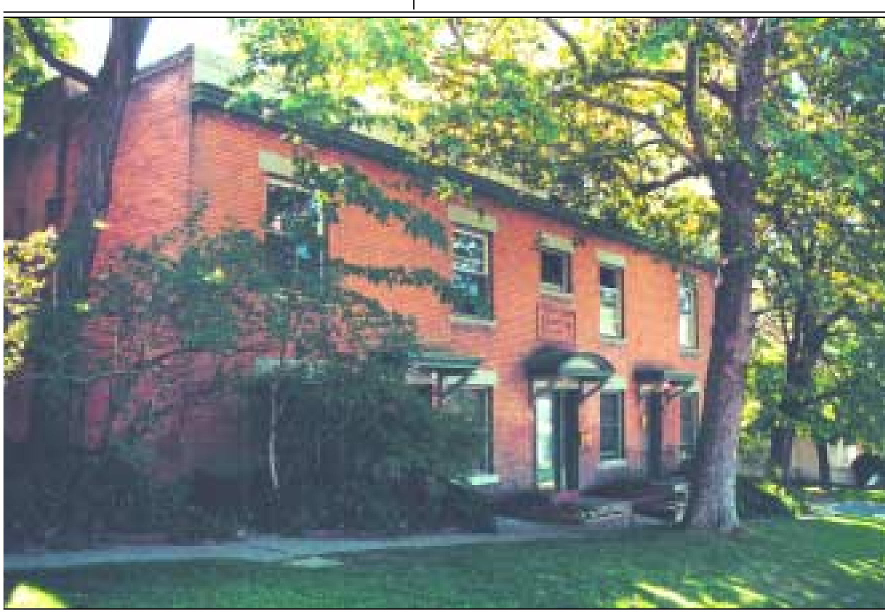
[Envision Utah Quality Growth Strategy and Technical Review]

housing. Instead, there aren't enough for-sale housing alternatives to large-lot, single-family housing units. There are smaller quantities of townhouses, duplexes and small-lot, single-family homes in Utah than elsewhere in the United States. In the next 20 years, the supply of housing types and overall housing preferences likely will continue to diverge as the demand for a range of housing choices increases and as zoning continues to constrain housing options to large-lot homes. In addition to a shortage of townhouses and duplexes, single-family lots are expected to increase in size – and therefore expense - further increasing the disparity between the housing supply and the market demand for housing.

There are growing indications that many developers in the Wasatch Area are willing to invest in a greater variety of housing. The challenge for Utah cities and counties is to ensure that their zoning regulations, taken as a whole, do not limit the availability of housing that is needed and desired by our residents. In developing a palette of housing options for the future, Utah cities and counties should use the different housing types to their best advantage. If properly sited, townhouses, condominiums and apartments can be used to help meet many community goals such as the creation of walking-friendly communities and increased transit use. These housing types can also help conserve open spaces sensitive lands.

A basic tenet of livable communities is good design, particularly when providing more dense and inexpensive housing types. Higher density housing types should be designed so that they seem part of the overall community, free of the negative visual qualities that often turn communities against housing that is not for large-lot, single-family use. In this chapter we do not recommend detailed architectural guidelines but instead suggest site design standards that will make a community both pedestrian-friendly and compatible with the character of the neighborhood.

Historic rental apartments in Salt Lake City.



Moderate Income Housing and Utah Law

Utah law is quite clear that all communities must plan for a sufficient amount of affordable housing. State law requires communities to plan to meet their five-year moderate income housing need, including an estimate of moderate income housing supply and demand and a survey of current residential zoning. The state law also requires communities to evaluate their zoned densities, one of the biggest factors in making housing affordable.

Making a mix of moderate income housing available is important to a community that wants to be responsive to the needs of its residents. In the 1990s, Utah housing went from one of the least expensive housing markets in the western region to one of the most expensive. Similar rises in housing prices have been recorded in other popular western cities such as Denver and Portland. If the widespread practice of zoning for mostly large-lot homes is not modified, economic problems will increase and people will be extremely limited in their lifestyles and household choices.

Utah Code Annotated, 10-9-307, requires communities to meet 5-year projected moderate income housing needs. Each locality was, by December 1, 1998, to put a plan in place (part of the general plan) to identify the affordable housing demand and how it will be met. Plan is to include:

a. an estimate of the existing supply of moderate income housing located within the municipality,

b. an estimate of the need for moderate income housing in the municipality for the next five years,

c. a survey of total residential zoning,

d. an evaluation of how existing zoning densities affect opportunities for moderate income housing, and ,

e. a description of the municipality's program to encourage an adequate supply of moderate income housing. (Moderate income defined as 80 percent of the median gross income.)

There are many benefits to having a diversity of housing in each community:

1] As people move through life's various stages, they can live and grow in the same community. Young couples, families and the elderly can live near relatives. Children may grow up knowing people from different ages, walks of life and from different income groups.

2] There is less demand on infrastructure. Envision Utah's studies show that greater choice in housing would reduce land consumption and increase redevelopment, thus reducing demand for new sewer, water and transportation infrastructure significantly.

Built Green Utah is working to encourage environmentally friendly building practices – "green building" – in Utah. Homes built to green standards may be more affordable, due to lower operating cost and higher performance, and may also offer home buyers greater comfort, reduced maintenance cost and higher resale value. Built Green is a voluntary program spearheaded by Fannie Mae that provides a range of tools to assist builders and lenders in providing reasonably priced, environmentally-friendly buildings. Contact Fannie Mae at (801) 715-6863 for information.

More information on Built Green Utah and tools to increase homeownership are included in the appendix to this workbook.

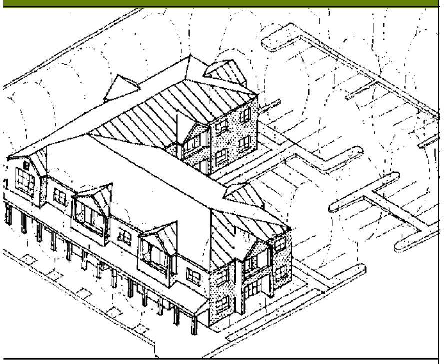
3] Also, if communities are designed in a manner that is conducive to walkable and transit friendly neighborhoods, the demand for additional road capacity reduces.

4] With more choice, housing can be made available where there is demand for it. More people will be able to choose locations that allow for less driving and that are close to shopping, work and school.

5] Providing housing choices in each community allows more families the opportunity to choose from a variety of locations while keeping their housing costs within their budget. A diversity of housing can aid in reducing both homelessness and the impacts of poverty by keeping housing costs within the range of more families.

Changes to zoning alone are not sufficient to remove the disparity between housing need and supply, but they remove obstacles to solving this problem that have been created by the public sector. Our recommendations don't seek to make zoning more restrictive, but instead outline tools to make zoning more flexible and responsive to market forces.

New Housing Types to Consider

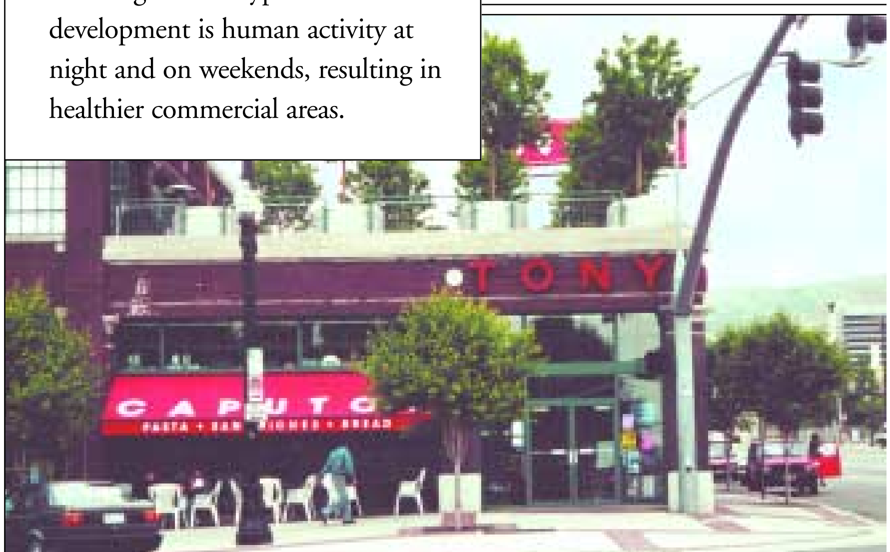


Mixed-use housing above retail.

In developing a housing strategy, communities should look to a variety of housing types to meet the range of housing alternatives people prefer. Our zoning codes often offer limited alternatives to detached housing and apartment complexes. The housing industry has adapted to this unfortunate trend. Financing, building and marketing have become standardized and adapted to national markets. Encouragingly, however, new hybrid housing types, which utilize some characteristics of single-family housing with the advantage of increased convenience and affordability have evolved in the past decade. The following are some housing types that should be considered.

Mixed-use housing above retail

Traditional neighborhoods and business areas often contain housing on the upper floors of retail establishments, or they mix apartments and shops on the same street. In districts where pedestrian access is a goal, it is still a good strategy to provide these types of housing. Recent developments like this have proven popular in the Salt Lake City area, as well as in other western cities. A major advantage of this type of mixed-use development is human activity at night and on weekends, resulting in healthier commercial areas.



Traditional mixed-use housing and retail in Salt Lake City.

Courtyard apartments

Before apartment projects became conglomerations of identical units, apartment houses often sat in residential neighborhoods, close to shopping. The best of these designs included courtyards near the entry, occupying about one-fourth of the lot area. These courtyards provided charm and open space, while the apartments were fairly dense, in three-story designs. These styles have made a comeback in many cities but are precluded by many suburban height and parking zone standards.

Top: Courtyard apartments near downtown Salt Lake City.

Middle and right: Courtyard apartments in a single-family neighborhood.

Big-house® apartments.

“Big house”® apartments

Some traditional neighborhoods have very large homes that were originally built to accommodate large extended families. Later, these large homes were converted into apartments to provide housing for family members in their later years or to provide housing for smaller families. From these historical examples, some developers have learned how to design apartments to fit into neighborhoods: apartments can be designed to appear to be a large home while accommodating two, four or even eight units.

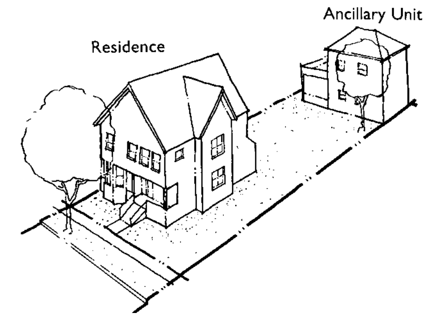
This “Big House”® includes 4 owner-occupied units

Big House® Apartments, roughly 20 units per acre.

▶ **Some communities attempt to limit accessory units to owner-occupancy while others have implemented them through conditional use permits. We recommend each community use accessory units as they feel comfortable. Experience and familiarity will illuminate how to locate and design this housing type for either owner-occupancy or rental use.**

Live-work units

Before zoning existed, people often conducted work from their homes, sometimes complete with a separate entrance and discreet signage. This traditional housing type recently has been rediscovered and is now known as a live-work unit. Zoning to accommodate a live-work unit must permit certain businesses to operate and, unlike zoning provisions for "home-occupations," must allow office use by non-resident employees and customers. While retailing typically is prohibited, everything from professional services to small manufacturing can be home-based. The total non-residential work space in live-work units usually is limited to between a few hundred square feet and roughly 2,000 square feet.



Accessory (ancillary) dwelling unit.

Accessory dwelling units

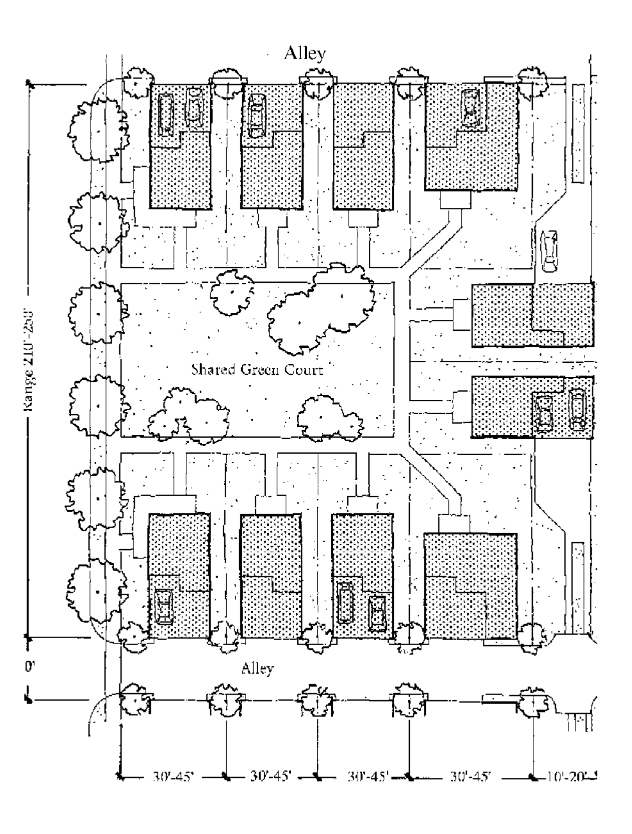
When extended families were housed on the same site, they sometimes converted a basement, carriage house or guest house into separate living quarters. Often separate servants' quarters were included in large homes. Curiously, this sometimes is permitted today in otherwise strictly exclusive single-family zones. Modern accessory dwelling units are often built over the garage. These units can be used as a studio, a teenager's bedroom, or rented as a separate apartment to help offset the cost of a mortgage.

An example of live-work homes in an old warehouse.

Live-work units in Salt Lake City.

Garden courts

A garden surrounded by urban housing has been one of the most successful development types for higher density housing in history. This housing type evolved in large European cities of the 17th century. Residents found that they had all the conveniences of living in the city but were also able to enjoy a bit of greenery and space in an otherwise crowded community. Many of those early housing developments are still around today, and their property values reflect their success. The idea was used in some of the most beautiful American cities, from Boston to Savannah, Georgia. Modern examples of small-lot homes or townhomes surrounding a green or plaza area also have been very successful. Typical modern zoning, based on minimum lot sizes, makes such housing difficult to develop. Densities may be the same as permitted, but minimum lot size code language is too inflexible to allow a portion of the lot area of each unit to be shared in a common green.



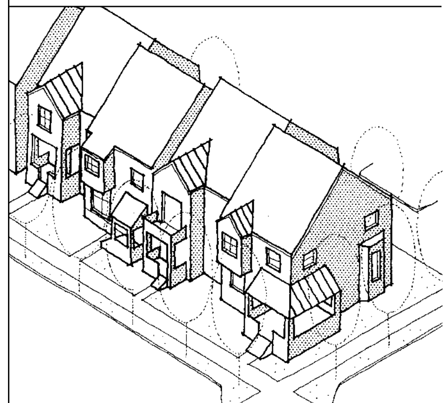
Garden court.

Garden courts in Washington State.

New townhomes representing traditional design.

Alley-fed townhomes and cottages

Early subdivisions often contained alleys. Without zoning, buildings could be built from one property line to the other. To ensure access for trash removal and service deliveries, alleys were reserved in each undeveloped block. During the 20th century, alleys fell out of favor but recently have been reintroduced to serve as garage access in small-lot and townhouse developments. When small-lot and townhouse developments have garage access from the street, the streetscape becomes a continuous line of garages and driveways. With garages accessed from the alleyways, the street is absent of driveways. Zoning that allows an inverse-crown curb



Alley-fed townhomes.

design helps make alleyways less expensive and more feasible. Some suburban city engineering departments, unfamiliar with alleys, have required the same development standards as public streets (wider widths, curb and gutter, sidewalks), making alleyways prohibitively expensive.

Townhomes in Draper's South Mountain area.

What's the Solution?

Envision Utah does not advocate the elimination of zoning. Utahns should continue to benefit from the way in which zoning protects property values and ensures predictable future land use. We do believe, though, that much of today's zoning should become more flexible and inclusive. Some of our proposals run counter to some of the current practices of local land-use agencies. However, we believe that they are feasible and will work to improve dramatically the available selection of housing for area residents while improving their overall quality of life. Generally, our recommendation is to develop zoning that allows a variety of housing types in each neighborhood, defined as about a one-half square mile area. Following are some recommendations that we believe will help address housing issues for Utahns.

Balance the number and size of zoning districts with the demand for various types of housing

This recommendation supports a fundamental provision of Utah State law, UCA 10-9-307, that each community should provide sufficient choices for all kinds of housing. While the current state law focuses on moderate income housing, we recommend that a diversity of housing be permitted and encouraged by local zoning.

We do not recommend zoning without density limits. Limits on gross density help a community control impacts on infrastructure and local services. The best strategy is to concentrate on quality city-scale design while aiming to meet housing needs. A community should mix and arrange the various uses and densities so that

▶ Some citizens connect higher density rental housing to lower levels of property maintenance and higher rates of crime.

■ Certain zoning techniques can be used to address these concerns.

■ Condominiums fill an important housing role for singles, empty-nesters and those who seek affordability.

■ Zoning language can ensure that a large percentage of housing is designed to appeal to buyers. For example, apartments or condominiums can be limited in a performance subdivision to less than eight to twenty units per structure or complex.

Zoning should allow a variety of housing in each community.

▶ **The walking commute: Housing types that are easier to afford for the young and old can be placed next to shopping and work opportunities to help build a community where day-to-day activities may be accomplished on foot.**

New modern townhomes with traditional exterior materials.

an optimal city-scale design emerges, complete with quiet neighborhoods, parks and busy business districts. Height, bulk and design regulations can be used to control the densities in any given area. Cities would continue to have their own unique character and design emphasis.

Balancing zoning with housing demand involves a number of somewhat technical steps, outlined in the "Model Codes and Analysis Tools for Quality Growth" workbook. In general, an accurate estimate of the capacity of local existing zoning, categorized by housing type, is compared with the local share of the countywide forecast for housing demand by type. Zoning is then adjusted to eliminate any disparity between future supply and future need. This allows the full range of desired housing types to occur in each city, according to the long-term preferences of present and future residents. With periodic monitoring and updating, cities and counties can be well planned and be flexible enough to meet future housing needs as they may arise.

Adopt performance-based development regulations

One of the major goals of zoning is to provide predictability of land use and to mitigate negative impacts. Most Utah cities and counties use a kind of zoning that prescribes a specific solution to each potential land-use conflict. Density, for example, is regulated by lot size. Minimum lot sizes achieve the goal of limiting density but do so with a rigid solution that limits the kind of housing provided.

Like typical zoning, regulations that are "performance based" also define acceptable levels of impact but leave the solution to the creativity of the landowner or developer. For example, a performance system regulates overall density to control impact, just as a minimum-lot-size regulation does, but it permits a variety of housing to be built within a given development. Under the minimum-lot-size system, a developer penalizes himself with fewer housing units if he varies from the absolute minimum standard specified in the code. Other performance standards, such as allowable lot coverage, open space area minimums and landscaping percentages can achieve some of the same results as yard setbacks but with more flexibility.

Performance standards have been criticized as difficult to enforce. Standards based on complex factors such as noise or traffic levels often are difficult to predict and enforce. The model code we recommend, for ease of enforcement, is a hybrid of simple performance standards and more traditional zoning standards.
We also recommend performance-oriented street standards, where minimum street widths and improvements are diminished for streets with a low expected traffic flow.

In addition to performance-based standards, it is important to permit a wider variety of uses than included in typical modern zoning. The code language in the Model Code document is flexible: Accessory units and live-work units are permitted in some lower density zones and offices and mixed-use retail can occur in higher density zones.

Adopt basic design standards for small-lot, townhouse and multi-family development

One reason that large-lot, single-family zoning often is adopted in lieu of performance standards is that the design of low-density, single-family areas is fairly predictable and in line with community standards or comfort levels. The design of higher-density housing types often is much less predictable and often unacceptable to nearby residents. While we do not recommend detailed design standards for architecture, we do recommend that simple, effective design standards be adopted to ensure that diverse housing types will meet the community's design expectations. Small lots less than 6,000 to 7,000 square feet, attached housing, zero lot line housing and the various forms of multi-family housing often are better accepted by residents when basic standards for landscaping, building placement and materials are adopted. The next chapter will address design standards in detail, but we maintain that it is important to combine design standards with the more flexible performance standards recommended in this chapter.

An example of court-yard housing.

Addressing Housing Needs in Your Community

Once zoning or comprehensive planning capacity is adjusted to allow enough overall housing to be built, the next step is to ensure that regulations permit the specific housing types needed by the market. As we mentioned before, performance-based subdivision regulations go a long way toward allowing variety in housing types. Many national performance-based codes exist, but "Model Codes and Analysis Tools" includes a simple add-on model code chapter that allows a community to conduct performance-based development without a complete rewrite of other local ordinances. The code language acts as a complete package that includes the sensitive lands protection recommended in Chapter 1 and the design standards recommended in Chapter 3.

The recommended code includes simple performance standards based on major impacts, such as gross density. Street standards are on a performance basis as well, with minor streets requiring fewer improvements than major streets. If language does not exist elsewhere in a community's code, additional standards – lot coverage, landscaping and tree canopy requirements – may be necessary to implement the included model code.

The performance standards do not rely on minimum lot size requirements. Density is controlled by units per acre, and landscaping is controlled by lot coverage and landscaping standards. Design standards do not dictate architectural style, but ensure projects are at a level of quality to meet a community's aesthetic requirements.

Alley-fed single-family homes that share a common wall.

NON-REGULATORY SOLUTIONS

While land-use planning is the focus of this toolbox, there are many other tools a community can use to increase the choice and affordability of housing in the community:

- Rehabilitation loans for existing but uninhabitable housing stock
- Lower permitting fees for affordable housing construction
- State or federal funds or tax incentives
- Programs offered by the Utah Housing Finance Agency
- Affordable housing programs administered by the Department of Community and Economic Development

Condominiums with retail on the ground floor

Summary

Planning and land-use regulations are necessary components of modern cities. However, the current process of zoning and planning often conflicts with the proper functioning of the housing market. In the Greater Wasatch area, the market distortion has artificially increased the supply of housing toward large-lot, single-family housing. If zoning remains as-is the mismatch between housing market demand and supply will become further skewed. This chapter outlined tools to enable zoning to be more flexible while maintaining control over development impact and ensuring quality design.

Providing people with a range of housing choices has many positive aspects – both for the community in general and for individual families. For the community, a market approach to housing consumes relatively less land and provides housing types that can serve as the backbone for communities that are walkable and support transit use. As individuals and families move from one stage of life to the next, a market approach enables them to live in housing that suits their needs and desires while allowing them to maintain their neighborhood bonds and live close to extended family members.

▶ Utah State Residential Rehabilitation Tax Credit is a 20% non-refundable state income tax credit available for the rehabilitation of historic buildings (National Historic Register) that are used as owner-occupied residence or residential rentals. For more information contact the Utah State Historical Society, State Historic Preservation Office at 801-533-3533.

UCA 10-9-307 for reference

Plans for moderate income housing.

(1) The availability of moderate income housing is an issue of statewide concern. To this end:
(a) municipalities should afford a reasonable opportunity for a variety of housing, including moderate income housing, to meet the needs of people desiring to live there; and
(b) moderate income housing should be encouraged to allow persons with moderate incomes to benefit from and to fully participate in all aspects of neighborhood and community life.

(2) As used in this section:
(a) "Moderate income housing" means housing occupied or reserved for occupancy by households with a gross household income equal to or less than 80% of the median gross income of the metropolitan statistical area for households of the same size.
(b) "Plan for moderate income housing" or "plan" means a written document adopted by a municipal legislative body that includes:
(i) an estimate of the existing supply of moderate income housing located within the municipality;
(ii) an estimate of the need for moderate income housing in the municipality for the next five years as revised annually;
(iii) a survey of total residential zoning;
(iv) an evaluation of how existing zoning densities affect opportunities for moderate income housing; and
(v) a description of the municipality's program to encourage an adequate supply of moderate income housing.

(3) Before December 31, 1998, each municipal legislative body shall, as part of its general plan, adopt a plan for moderate income housing within that municipality.

(4) A plan may provide moderate income housing by any means or combination of techniques which provide a realistic opportunity to meet estimated needs. The plan may include an analysis of why the means or techniques selected provide a realistic opportunity to meet the objectives of this section. Such techniques may include:
(a) rezoning for densities necessary to assure the economic viability of inclusionary developments, either through mandatory set asides or density bonuses;
(b) infrastructure expansion and rehabilitation that will facilitate the construction of moderate income housing;
(c) rehabilitation of existing uninhabitable housing stock;
(d) consideration of waiving construction related fees generally imposed by the municipality;
(e) utilization of state or federal funds or tax incentives to promote the construction of moderate income housing;
(f) utilization of programs offered by the Utah Housing Finance Agency within that agency's funding capacity; and
(g) utilization of affordable housing programs administered by the Department of Community and Economic Development.

(5) (a) After adoption of a plan for moderate income housing under Subsection (3), the legislative body of each city that is located within a county of the first or second class and of each other city with a population over 10,000 shall annually:
(i) review the plan and its implementation; and
(ii) prepare a report setting forth the findings of the review.
(b) Each report under Subsection (5)(a)(ii) shall include a description of:
(i) efforts made by the municipality to reduce, mitigate, or eliminate local regulatory barriers to moderate income housing;
(ii) actions taken by the municipality to encourage preservation of existing moderate income housing and development of new moderate income housing;
(iii) progress made within the municipality to provide moderate income housing, as measured by permits issued for new units of moderate income housing; and
(iv) efforts made by the municipality to coordinate moderate income housing plans and actions with neighboring municipalities.
(c) The legislative body of each city that is located within a county of the first or second class and of each other city with a population over 10,000 shall send a copy of the report under Subsection (5)(a)(ii) to the Department of Community and Economic Development and the association of governments in which the municipality is located.

3

Making Our Community A Good Place To Walk

Overview

▶ **Pedestrian-oriented neighborhoods, with a center of small-scale shops, provide residents with a connection to community life. Many residents are willing to pay a premium to live in an area where walking around the block is pleasant and walking to the store is both feasible and enjoyable. [Market Perspectives, 1993]**

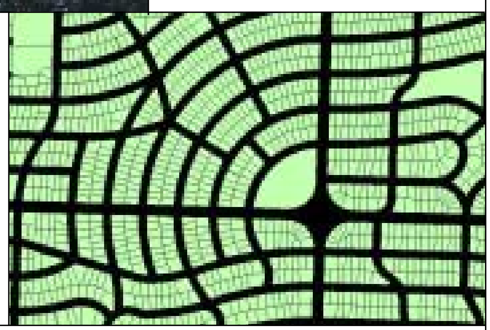
Pedestrian-scaled streets and buildings are rooted in the history of human communities. The features of walkable communities still exist in older neighborhoods that developed in the early 20th century. These areas have experienced a resurgence in popularity throughout the United States and in Utah. The Avenues in Salt Lake City is an example of a popular traditional walkable area. This neighborhood is an attractive, vibrant place with small blocks, leafy canopies of tall street trees, on-street parking, a range of housing types and sizes, an age-diverse population and useful destinations within walking distances.

Walkable communities are a key strategy in the toolbox for achieving "quality growth." Communities should work to apply the principles at all levels – from individual buildings, to blocks, to 1/2-mile walkable neighborhoods and to entire towns and cities. A concerted effort to shape development into livable, walkable communities will not only help accommodate the one million new residents expected in the greater Wasatch Area over the next 20 years, but will protect our beautiful environment for future generations.

This chapter explains the principles and benefits of walkable communities and explains strategies to create such communities in both existing and new growth areas.

Residents enjoying Ogden's 25th Street.

The characteristics of a walkable community include:
- a diversity of uses (bottom)
- a connected street grid (middle)
- and, often, transit service that ties into the heart of the community (top).



Density, diversity and design

Making communities walkable is not a mysterious process. People naturally will walk more if useful destinations are close to their homes and places of work and if the walking environment is reasonably safe, interesting and pleasant. Walkable communities share several key characteristics that differ from auto-oriented development.

Walkable communities are compact, built at somewhat higher densities than conventional development. This compactness brings people and potential destinations closer together, making a walk feasible. An additional benefit is that compact communities use less land. Even moderate increases in housing density and commercial intensity can yield great improvements in accessibility and preservation of open space. For example, a reduction in average residential lot size from 15,000 square feet to 12,500 square feet would preserve 170 square miles of open space and 115 square miles of agricultural land through 2020 (*Envision Utah's Quality Growth Strategy and Technical Review, January, 2000*).

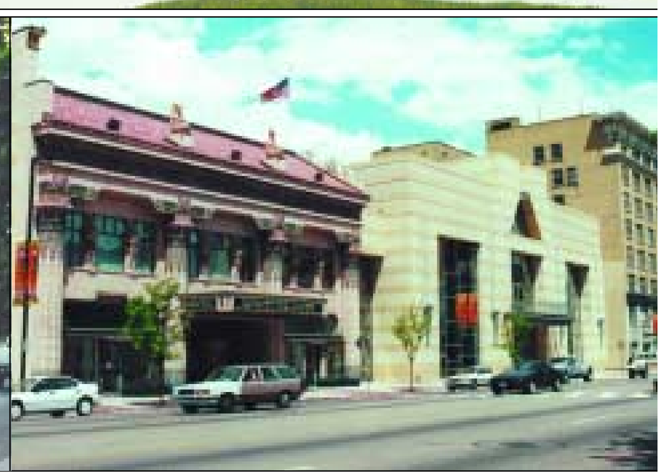
Compact developments are not automatically walkable, however; other criteria are essential as well. Walkable communities contain a diversity and mix of uses as well as useful destinations and daily conveniences, such as shopping or day care, clustered at the center of the community. This mix of uses minimizes distances between housing and various destinations. In commercial centers, a mix of uses fosters higher levels of pedestrian activity that in turn create a sense of safety. Transit service often is available at the core of the walkable community as well, linking these highest-intensity areas to their surroundings, and riders to shops and services.

Finally, walkable communities have a human scale that makes walking and bicycling more enjoyable in addition to accommodating the automobile. Non-residential buildings, with many windows and doors, are set close to the street. This configuration enhances the relationship between the private realm of buildings and the public realm of the street, creating an interesting walking environment. Narrower streets cause drivers to be naturaly more cautious, which slows traffic and reduces accidents. Smaller street widths also minimize crosswalk distances for pedestrians.

Applicability to a range of scales

The principles of walkable communities apply to neighborhoods of many different scales. While a walkable community may be a specific neighborhood-sized area (with a 1/4- to 1/2-mile radius,

Pedestrian oriented streets at the neighborhood (Avenues in Salt Lake), community (Brigham City) and regional level (Ogden).



An unwalkable area (top) can be transformed, piece by piece. Street trees (upper middle) set the context. A successful first project (lower middle) can lead to a cohesive walkable streetscape (bottom).

discussed later), many walkable areas can and should be combined and linked with whole towns or cities. Pedestrian friendly concepts can be applied to developments ranging from the scale of individual buildings to small business districts to the downtowns of larger cities.

Finally, the walkable concept can be applied to different types of locations. It can be used for infill development within existing areas such as downtowns or older suburban neighborhoods, for new growth at the edge of existing development, or for freestanding new towns.

Who creates walkable communities?

Both public and private actions help create walkable communities. Public planning staff, front desk clerks, engineers, public works departments and legislative boards provide a public framework of streets, trees, parks and natural open spaces. They also regulate and guide private development. In the private sector, developers build pedestrian-scale, livable communities. Finally, private citizens help encourage and promote walkable development through supportive attendance at public hearings, by sending favorable letters to elected officials or the local newspaper, and, most importantly, by frequenting the shops and living in walkable communities.

Finding appropriate areas for walkable communities

A community needs to determine which areas are most appropriate for transformation or repair into walkable districts. A walkable area should be large enough, through new development or redevelopment efforts, to create a critical mass of activity. Ideally, walkable districts should be connected to the greater community and not be isolated islands.

A walkable community should not be cut off by infrastructure or environmental constraints. Wide arterial roads with heavy traffic and some transit facilities such as train tracks or grade-separated busways may act as barriers to pedestrian access. Environmental constraints such as steep slopes also can restrict pedestrian accessibility and limit the amount of land available for development. Park-and-ride lots, buildings with no opportunity for "pass-throughs," and even transit stops or stations themselves also can constitute pedestrian barriers, if excessive in size or walled off from the surroundings.

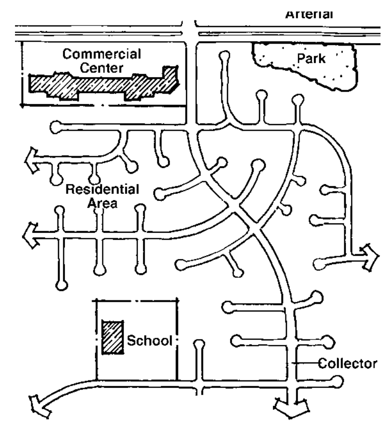
In some situations, a more appropriate configuration may be a "one-sided" walkable area. This approach could be used to place large retail businesses that require high visibility from automobiles along an arterial street, while focusing pedestrian-scale elements farther inside the walkable district, away from the arterial street.

Walkable Communities Are a Return to Traditional Utah

The traditional design of Utah towns includes many walkable features. In contrast, post-World War II communities have developed primarily to favor and accommodate the automobile.

When Brigham Young and the Utah pioneers settled the Great Basin, they were guided by the town planning ideal set forth in the plat of The City of Zion with its well-known gridiron street pattern. As a result, the original core of many Utah cities has a regular grid of streets. A grid provides multiple parallel routes from one destination to another. This helps reduce traffic levels on individual streets because there are more streets to distribute and carry traffic loads.

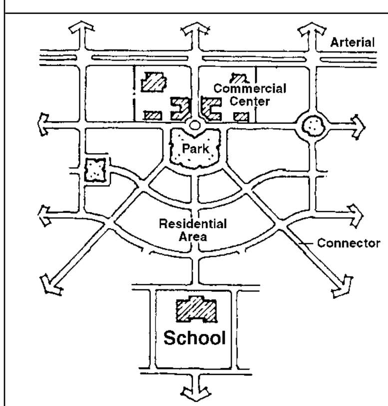
In contrast, during the postwar era, traffic engineers have sought to channel traffic loads through a hierarchy of local, collector and arterial streets. While local streets benefit from low traffic levels, larger streets carry heavy and fast-moving traffic that makes them unattractive and dangerous for pedestrians or bicyclists.



YOU CAN'T GET THERE FROM HERE

Unconnected streets [top] increase traffic on the relatively fewer through streets. Additional demands on the thoroughfare system often lead to extremely large public expenses that could be avoided if drivers used the residential and collector network for local trips [bottom].

Connected street networks also have improved emergency response time and likely have lower refuse collection and snow removal costs.



Commercial and community centers located on these busy arterial or collector streets are nearly cut off from pedestrian access. Furthermore, walking distances are longer with the disconnected, hierarchical street pattern. Discontinuous street systems require more driving and more turning, decreasing capacity and increasing congestion.

Traditional towns in Utah, such as Brigham City, often have a "main street" within walking distance of residents where people can run their errands and chat with their neighbors. The shops, post offices and other useful destinations are set close to the street, making the sidewalk a more interesting and therefore inviting environment for walking.

Traditional main-street buildings on Ogden's 25th Street.

Cars parked in on-street parking spaces help provide a buffer between traffic on the roadway and pedestrians on the sidewalk. Any off-street surface parking on these main streets is located behind or to the side of buildings, rather than between the building and the sidewalk.

On a smaller scale, street design plays an important role in creating a pedestrian-friendly realm. Traditional streets have generous sidewalks landscaped with grass planting strips and shade trees that make walking pleasant.

A unique feature of many streets in Utah is extremely wide roadways, a result of historic Mormon city planning practices that favored avenues wide enough to allow a team of oxen to turn around. Today, these wide streets pose special challenges to, and unique opportunities for, creating pedestrian-friendly environments. Often, the streets are wider than necessary for the existing or planned street traffic capacity. The excess width encourages travel at high speeds. However, there is silver lining: These wide streets provide the potential for improving the pedestrian environment through sidewalk widening, extensive tree planting, the addition of landscaped center medians and added on-street parking.

Finally, at the regional scale, traditional development styles can show us much about how to structure growth in compact communities surrounded by open space. Compact, walkable development in cities and towns is a formula for maintaining Utah's beautiful landscape. Traditionally, people lived in villages and small towns that had a finite edge set up against green space. Views from town of surrounding mountains provided a visual tie-in to the regional location and, therefore, offered a sense of place. While driving along a road, the transition from countryside to town was readily apparent. Today, the line between development and the natural landscape is blurred due to "leapfrog" and low-density development.

Advantages of Walkable Communities

Walkable communities have many benefits, from the regional scale to the local scale. They encourage a mix of housing choices to suit various stages of life, such as families with children, empty-nesters or retirees. Walkable communities channel growth in new areas to protect habitat, agricultural land and open space. They reduce dependency on the automobile and reduce infrastructure investment costs.

Walking-friendly restaurant in Bountiful. Walkable design concepts can apply to conventional suburban commercial buildings.

Regional balance and health

There is a growing concern across the country that central city and suburban areas are unbalanced in terms of land use. Many downtown areas have become places that lack housing and any evening or weekend activity. Suburbs have become places that separate housing, retail and employment uses in different, mutually exclusive areas making residents dependent upon their cars to accomplish even the simplest errands.

Walkable communities can be part of an organized, concerted effort to address region-wide accessibility, congestion and sprawl. Channeling development in compact patterns, reducing automobile dependency and improving the public transit system will help the regional transportation network perform better. Because walkable communites complement housing with nearby retail, employment or community services, they may help improve the ratio of jobs to housing locally and region-wide. People may be able to live, work and shop in the same community. The mix of uses may help local governments achieve greater economic strength and resiliency in the face of recessions or market declines in different sectors. Individual developers and businesses will gain a wider market area because of street connectivity and greater population within and near the walkable community.

Urban revitalization

Walkable communities form an efficient framework for infill and redevelopment of underutilized lands in older urban and suburban areas (see the next chapter, "Reuse and Infill"). Tools to increase pedestrian access help communities improve their livability and compete regionally for residents, workers and shoppers.

Creating walkable communities in existing but underutilized urbanized areas is particularly cost-effective because the public infrastructure (roads, parking areas, street lights, transit service and parks) already exists, although there may have to be some updating.

This pedestrian friendly development in Salt Lake City was built on a former brownfield.

The walkable community concept also capitalizes on and enhances the historic, cultural and aesthetic infrastructure in an existing community, including buildings, views and the legacy of a shared past.

Choice of housing for different stages of life

The population and demographic trends that will affect housing demand in the Greater Wasatch Area are discussed in Chapter 2, "Meeting Housing Needs." Today's diversity of households includes young single people, childless couples, parents with children, empty-nesters and retirees. Mixing these housing types in a well-designed, walkable community allows people to continue to live in the same community as their housing needs change, rather than forcing them to move away to find appropriate housing. Walkable communities also provide greater autonomy for children, seniors, low-income persons and others who may lack ready access to cars. Children can walk to school or to friends' houses, and seniors can walk to buy groceries, go to the bank and do other errands.

Choice of sites for commercial tenants

Walkable communities also provide choice and diversity for retail, office uses and other tenants. Visitors who drive to the community to shop can park just once and walk to all their destinations and errands, rather than having to make multiple short trips by car from parking lot to parking lot. Developments in walkable communities often can get by with lower parking requirements (discussion on shared parking in Chapter 4, "Reuse and Infill"). And of course, residents and workers in walkable communities can walk to the commercial core to do errands. Retailers can offer a rich shopping experience in this pedestrian-friendly environment by providing places to linger, people-watch and stroll.

Human activity and buildings that face the sidewalk with transparent windows foster a safe environment.

▶ Crime Prevention Through Environmental Design

■ CPTED recognizes that the design and use of the physical environment affects crime by affecting human behavior. Identifying intruders is much easier in, and criminals are deterred by, a well-defined space that delineates and reinforces ownership.

■ Criminals don't want to be seen. Placing physical features, activities and people in ways that maximize the ability to see what's going on discourages crime.

■ To learn more, visit www.ncpc.org/cptedcop.htm.

Walkable communities are gaining in popularity among large office tenants. For example, in 1994, Apple Computer relocated 500 new jobs to Laguna West, a new traditional-style neighborhood near Sacramento. State Farm Insurance located more than 1,000 jobs at Northwest Landing, a new pedestrian-friendly community near Dupont, Wash. Microsoft is planning to locate a three million square foot campus at the Issaquah Highlands Town Center, adjacent to Seattle. In the Greater Wasatch Area, NuSkin located its corporate headquarters in downtown Provo.

Safety

Combined with street-oriented architecture, the great variety of activities in a walkable community (such as walking, biking, roller skating, street vending and people watching) fosters a safe environment because there are always people present to look out for one another. Pedestrian-oriented design features, such as numerous storefronts, windows and porches facing the street, also help provide "eyes on the street" (informal surveillance).

Street design in a walkable community plays a role in improving safety for children and other pedestrians. Balanced, reasonable street widths, park strips, street trees and traffic-calming measures, such as narrowed intersections, slow traffic to manageable levels. In contrast, conventional streets often are designed to accommodate traffic speeds of 15 miles per hour faster than the posted speed limit (*Vanesse Hangin Brustlin Inc., 1994*).

This practice encourages drivers to speed at the expense of pedestrian safety.

Environmental benefits

Walkable communities have numerous indirect environmental benefits. By channeling development in compact patterns, walkable

Walkable communities, with their ample trees and lower amounts of asphalt, reduce summer temperatures, energy use, urban ozone levels and storm water runoff.

communities help preserve open space, habitat and other sensitive lands. Development that might have encroached on critical lands instead is steered to vacant or redevelopable parcels in areas with existing infrastructure, or to buildable sites in designated new areas.

An ample number of trees helps mitigate “urban heat islands” caused when asphalt and other man-made surfaces absorb and radiate heat, making ambient air temperatures much higher in urban and suburban areas. Trees reduce energy demand for air conditioning in homes and businesses because the shade lowers ambient air and ground temperatures. Trees also reduce carbon dioxide levels in the air, filter pollutants and produce oxygen.

Air and water quality improve when people are able to walk and bike more and drive less. Automobile emissions are reduced, including chemicals and particulates from tail-pipes and particulate matter from tires. Much of these pollutants are washed into streams and other water bodies during heavy storms.

Walkable communities tend to be more compact than conventional development. The smaller lawns consume less water per household. This helps protect Utah’s valuable and scarce water supplies.

Transportation and air quality benefits

Studies have shown a link between the qualities associated with walkable communities – density, diversity of uses and pedestrian-scale design – and travel behavior. Travel behavior varies by trip purpose (commuting to work, shopping, socializing, etc.) and by form of travel (car, transit, biking, walking or a combination).

Overall, members of households in walkable communities drive fewer miles and make fewer trips, compared to people in automobile-oriented areas. This is true even when comparing households at the same income level.

WHAT AFFECTS HOW OFTEN PEOPLE DRIVE?

One study (*Fehr & Peers, 1992*) compared travel behavior of residents in older traditional communities to that of residents in conventional suburban developments. The number of automobile trips in suburban areas was 23 percent higher than in older traditional communities. Suburban residents also drove alone much more often than residents of older traditional communities (68 percent versus 49 percent).

WHAT AFFECTS HOW FAR PEOPLE DRIVE?

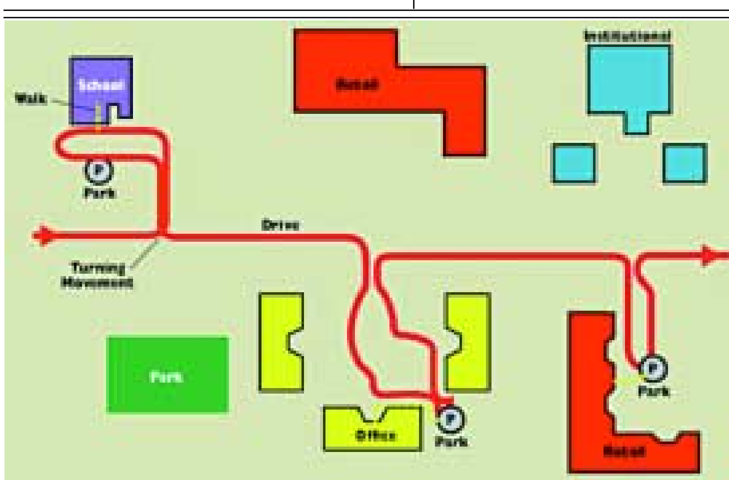
Another study, which controlled for income levels, found annual VMT in households in traditional neighborhoods to be nearly 50 percent lower than that in more recent standard suburban development. VMT is “vehicle miles traveled,” used as a measure of how much a household drives in a year. By doubling the residential population density, VMT was reduced 20 to 30 percent. Carbon monoxide emissions were more than 40 percent lower in the traditional neighborhoods (*Holtzclaw, 1991*).

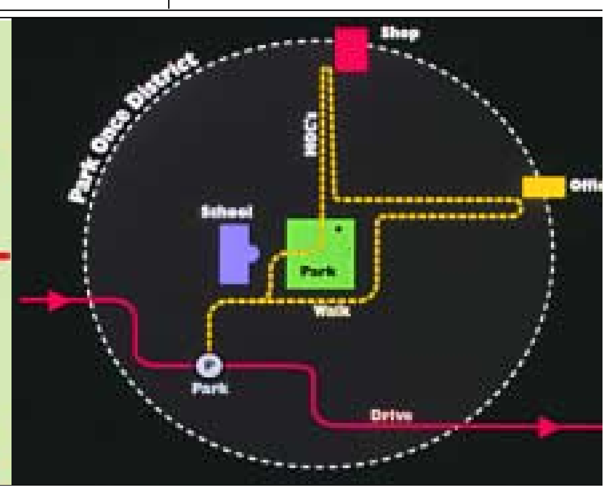
While transportation planning and engineering efforts such as highway and transit facility planning usually focus on trips to and from work, these commute trips account for just one-fourth of average daily vehicle-miles-traveled (VMT) for a typical household. The average suburban household now makes 10 to 12 auto trips per day, and the majority of these trips are made for non-commute purposes such as shopping, getting kids from school, nighttime entertainment or visiting friends. The walkable community concept has potential for a great influence on travel behavior for these non-commute trips. Walkable communities would allow people to walk or bike for many of these frequent but short non-commute trips. People can combine multiple destinations and purposes into one walking trip, rather than making several short trips by car for several different purposes.

In 1994, Raleigh, North Carolina, planners studied the effect of connectivity on traffic. They found that a 1500-foot street grid will produce maximum traffic volumes on any one street of about 2500 vehicles per day (vpd). If the grid is expanded to 3000 feet, the maximum traffic volume on any one street jumps to about 8600 vpd. On the other hand, a 750-foot grid reduces the maximum volumes on streets to 1100 vpd or less. This same study showed total travel costs to be about a third greater in the 3000-foot grid than in the 1500-foot grid. We recommend a 600-foot grid, about eight intersections per mile, to minimize traffic flows on any single street. (*Fehr and Peers, 1997*).

Ideally, residents should be able to walk to shopping and other errands from their homes. However, in many areas, this may be unrealistic. For example, small towns may have a retail district that draws people who live

In an auto-district, one car uses 3 to 5 parking spaces in the course of a day. Walking areas are "park-once" districts, where small day-time errands can be accomplished on foot.





dozens of miles away. In these situations, it is still possible to reduce automobile dependency within this retail area by configuring buildings and streets to create a walkable, "park-once" district.

When people can meet many of their trip needs by walking or biking rather than driving, air quality improves, particularly since short auto trips are more polluting per mile.

The relationship between density and transit ridership

Several studies have shown that higher densities and compact patterns of development lead to substantially higher rates of transit ridership. A 1984 study found that transit ridership rose most sharply when net residential densities increase from 7 to 16 dwelling units per acre (S*mith, 1984*). This is equivalent to moving from a small-lot, single-family home to a duplex home. A more recent study showed that with every 10 percent increase in population density there is a 6 percent increase in boardings at light-rail transit stations (*Parsons, Brinckerhoff, Quade and Douglas et. al., 1995*). In the San Francisco Bay Area, researchers have determined that, even after controlling for income and transit service levels, transit-oriented neighborhoods on average generate about 70 percent more transit trips and 120 percent more pedestrian/ bicycle trips than nearby automobile-oriented neighborhoods (*Bernick & Cervero, 1997*).

Walking and biking to the transit station

People are more likely to use transit if it is within walking distance and they do not have to drive or take a "feeder" bus to get to the transit station. The pattern of multiple connected streets in a walkable community creates direct routes between destinations, making walking quicker and distances shorter. Bike lanes are an integral part of the transportational network that encourage bicycling. When people are able to walk or bike to transit, they reduce the need for all-day parking spaces at the transit station, an inefficient use of land. Furthermore, when people can walk or bike to transit, local air quality improves.

Infrastructure savings

Compact development uses infrastructure efficiently, saving money for developers, residents and government. Infrastructure outlays (such as roadways and sewer lines) are minimized with compact development, and infrastructure costs per unit are lower, since costs can be spread over more units for the same given

▶ **A Florida study showed that providing infrastructure at a moderate residential density of 12 units per acre cost $24,000, while at 3 units per acre the cost doubled to $48,000 [Kassowski, 1992].**

COORDINATE DEVELOPMENT WITH TRANSIT SERVICE

While the level of intensity of development in a walkable community will vary with local conditions, as a rule the higher-capacity forms of transit service should be supported by the highest densities. The highest intensity of uses should be clustered around higher-capacity transit stops or stations, such as light rail stops or dedicated "busway" stations, to maximize benefits from the substantial investment involved. More moderate densities are acceptable adjacent to bus stops serving regular-frequency bus routes, due to the lower capital cost investment associated with this flexible mode of travel.

▶ **A community identity is created by a central core of activity in each walkable community and the traditional design features of its streets.**

Many residents are willing to pay a premium for such a "sense of place."

area. Furthermore, because residents need fewer cars per household, and employees and visitors can often arrive by transit, walkable communities allow for a reduction in conventional parking requirements.

Reduced demand for off-street parking frees up more land for buildings, parks and other uses. The vibrancy of commercial and mixed-use districts is often compromised by too much land dedicated to parking.

Infrastructure costs per housing unit are lower in more compact communities. In examining alternatives for Salt Lake City's growth, Envision Utah estimated the infrastructure costs associated with continued sprawling suburban development patterns to be more than $30,000 more per housing unit than those associated with a more compact, transit-friendly and walkable alternative.

Compact, walkable developments also offer significant long-run fiscal advantages. Numerous economic studies, dating back to 1955, show that the mixed-use patterns and compact densities associated with pedestrian-friendly, traditional developments offer significant savings for developers and reduce tax burdens typically associated with growth (*Frank, 1987*). A recent Rutgers University study showed that a New Jersey development plan that adopted a pedestrian-friendly, connected approach to roads, housing and facility placement would save the state $1.3 billion in capital costs and more than $7 billion in operation and management costs over a 20-year period (*Burchell, 1992*).

Adoption of Envision Utah's Quality Growth Scenario would save an estimated $4.5 billion in transportation, water, sewer and other utility infrastructure costs by 2020, compared to a continuation of current growth patterns.

Market advantages for residential development

Connections to community life and "town center" activities are increasingly cited as important considerations when buying a home. The diversity of housing types and the attractive public features of walkable communities help homes sell as well as or better than homes in conventional

People are more likely to use transit if it is within walking distance and they do not have to drive or take a "feeder" bus to get to the transit station.

When people are able to walk or bike to transit, they reduce the need for all-day parking spaces.

suburban developments.
Studies have found that walkable developments match the absorption rate (the rate at which new homes are purchased as they become available for sale) of competing suburban developments, even in cases in which the most attractive neighborhood amenities (such as parks, street trees and fountains) were not yet in place.

Surveys of home-owners in new neighborhoods designed with traditional principles have shown that home-buyers prefer many design features associated with traditional neighborhoods, such as narrow streets, front porches and alleys. In one study, more than two-thirds agreed that their pedestrian-oriented community had a stronger sense of neighborliness when compared to other developments in which they had lived. In the same survey, many home-owners admitted that they paid more to live in their walkable development, and 84 percent said that they would do so again (*Market Perspectives, 1993*).

Of course, not all walkable communities are new or expensive developments. The walkable concept is an excellent way to retrofit older existing areas and design new areas in patterns that provide affordable, modest housing for rental and for purchase.

Shaping a Walkable Community

Configure communities for convenient pedestrian access

All areas in a walkable community have easy pedestrian connections to a core area that contains retail, transit or other conveniences. Ideally, the core is near or at the center of the walkable area, surrounded by higher intensity uses. A connected street network links the core to the remainder of the walkable district. The walkable environment should not be isolated by impediments to pedestrian movement, such as busy arterial roadways, large parking lots and rugged terrain.

Jack's Market, which has upstairs housing space, creates a unique identity for a new neighborhood in Tooele City.

Core areas that have retail typically must be positioned on busier roads for drive-by patronage. Where buildings and activities face this major road, a mixed-use boulevard can be established that serves uses on both sides of the road. Where buildings cannot reasonably address the major road (due to heavy, loud traffic levels or other constraints), retail uses can still relate to abutting uses with local street connections and architecture that faces these streets.

Size communities for easy walking

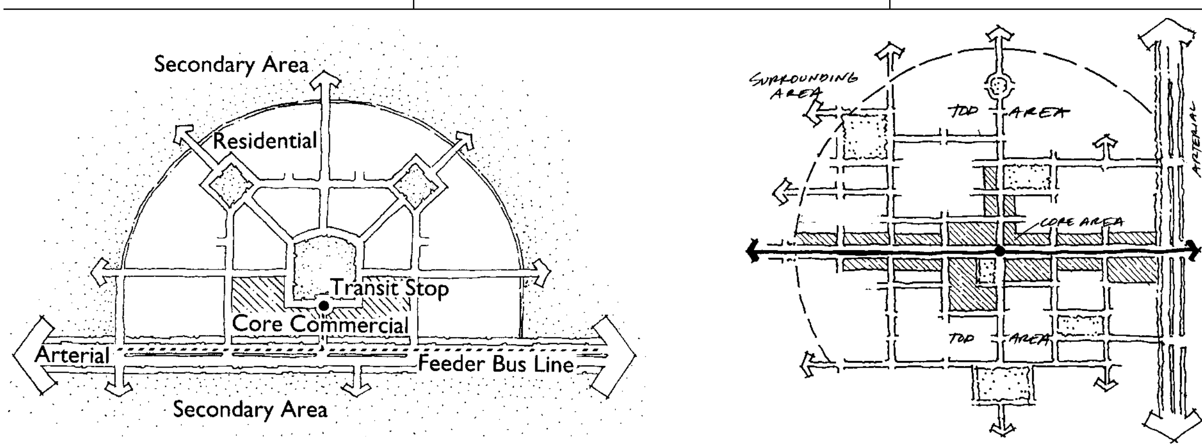
While the principles may be applied to any size project, walkable communities have an ideal minimum and maximum size. The minimum physical size of a walkable community guarantees that there will be enough population to support retail and other services. The maximum size of a walkable district ensures that residents and workers will be able to walk to the services in the core.

A one-half-mile walk that takes about 10 minutes constitutes the outer limits of a walkable community, while a higher concentration of uses should occur within a one-quarter-mile radius. While a walkable district can be as large as 500 acres, the minimum size is 30 to 60 acres, depending on the scale of the community and the regional location.

Focus communities on a central core of retail and services

Walkable communities should be focused on a core or town center that serves as a focal point for the neighborhood and provides convenient access to shops, restaurants and community-oriented services, such as day care, libraries

One- and two-sided walkable districts, each oriented around a central core.



and meeting halls. A modest-sized public plaza or park is also appropriate in the core. A transit stop in the center allows transit and other forms of travel to be combined. A core may be in linear form as well. For example, the classical main street functions as a core.
Other higher-intensity uses, including offices, public facilities (such as clinics, government services, post offices and gymnasiums), cinemas, hotels, health clubs and high-density housing also are appropriate in the core as long as parking does not compromise the pedestrian character of the area.

The size of the core varies with the scale, character and accessibility of the individual community. The core should comprise about 5 to 40 percent of the land area of the walkable district. For example, a small village may be able to support only a minimal amount of retail or community-oriented services. In contrast, larger towns and higher density areas will be able to support a significant amount of retail, as well as offices and a city hall or other community functions in the core. Outside the core, the remainder of the walkable district is usually comprised of moderate-density housing, although offices, parks and other uses are possible as long as they contribute to a pedestrian-friendly environment.

Include a diversity and mix of uses

Walkable communities should contain a mix of uses, concentrating the highest intensity of retail, commercial, civic and residential uses in the core. Lower intensity uses should be located farther from the core.

Ideally, the core should support daytime and evening activities to create an attractive and safe neighborhood destination. Offices support cafes during lunch hour, shops draw people during the day and on weekends and restaurants and movie theaters draw people at night and on weekends.

New commercial core at the heart of a walkable community.

► **An interconnected street network reduces the traffic load on any single street by dispersing it. Without interconnected streets, arterials become congested with traffic and become unwalkable barriers to pedestrian activity. Streets that connect help pedestrians by providing them with direct walking routes compared to standard cul-de-sac subdivisions.**

Increase street connectivity

By definition, the highly connected street pattern in a walkable community is composed of smaller block sizes to minimize walking distances between destinations. The scale of residential lots and ownership patterns lends itself to smaller blocks than commercial areas (particularly retail anchor stores with large parking lots). As a rule, the maximum block size for residential uses is 3 acres (220 by 600 feet), while the maximum block size for commercial uses is about 4 to 7 acres (500 by 600 feet). Note that these block sizes are maximums; smaller block sizes are always possible and are encouraged.

Increased street connectivity can be accomplished with a traditional gridiron pattern, but there are more interesting alternative street layouts that offer the same advantages which a community may consider. Connected street-patterns may take a curvilinear form or a radial form.

Require street-oriented buildings

In walkable communities, buildings should face and be sited close to the street, rather than behind large front parking lots or garages. Putting buildings, windows and entries at the street (with minimal setbacks) helps define the sidewalk as a pedestrian environment by adding activity, architectural variety and a pleasant sense of enclosure to the street.

Ensure sufficient density to create activity and support retail

The intensity of development in walkable communities should be sufficient to support retail

Street-oriented mixed-use buildings in a modern (left), and traditional style (right).

businesses and transit service in the core. It should also create activity and interest along streets and in parks. Development intensity in walkable communities can be administered using minimum Floor Area Ratios (FAR) for commercial uses or mixed uses and minimum densities for residential uses. Minimum FAR and density standards can enhance greater pedestrian access.

Walkable neighborhoods should include a variety of housing types and sizes to suit the needs of different households. Residential development intensity should be governed by minimum and maximum average density, rather than limited lot sizes, so that there may be more variety within each area.

Public Streets and the Parks Form the Framework

Design streets for pedestrian comfort

Streets are public investments that shape the public realm and provide a civic gathering space for the community. Streets in walkable communities provide for the comfort of pedestrians as well as the needs of the automobile. Streets are lined with buildings, rather than parking lots. Parking is set behind buildings, away from the street. Streets have trees to shade pedestrians and motorists. Minimum roadway widths discourage fast automobile speeds, while still allowing automobile access throughout the site.

▶ Floor Area-Ratio is the ratio of building floor area to land or parcel area. A 10,000-square-foot building on a 5,000-square-foot lot has a FAR of 2.0

Walking-friendly housing at 8 units per acre (left) and 50 units per acre (above).

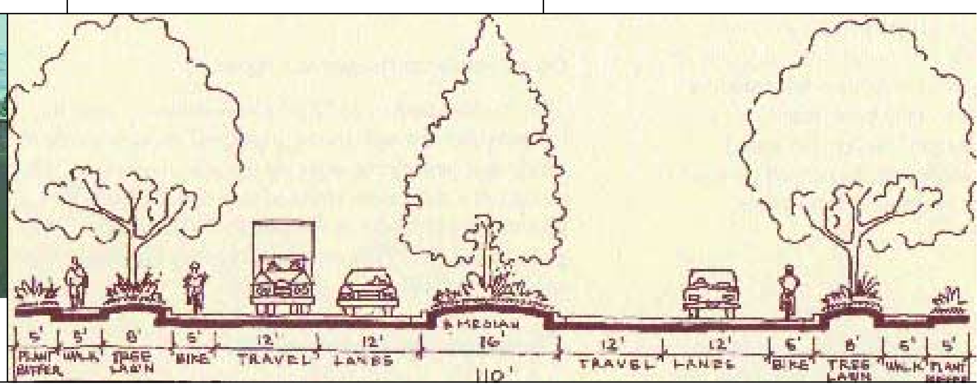
Minimize roadway width in street section design

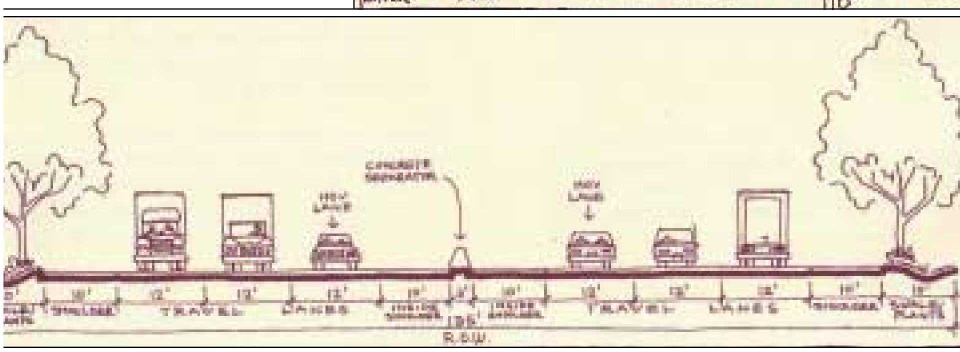
Many existing streets in Utah are very wide. The width and traffic levels on these streets may create a barrier to pedestrians trying to cross the street, create a hazardous scenario for walking or divide a community into two halves. In contrast, narrow roadways tend to have the effect of making drivers travel more slowly and carefully. New streets should be designed such that lane widths, designed speeds and number of travel lanes are kept to a minimum without compromising safety.

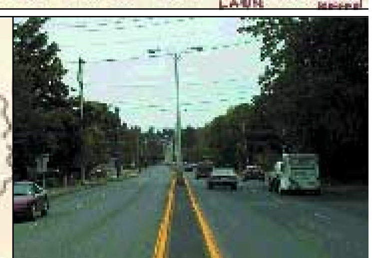
All roadways serving walkable areas should have on-street parking. On-street parking helps provide a buffer between the traffic on the street and the pedestrians on the sidewalk and encourages drivers to travel more slowly. However, if there is too much off-street parking, no one will park on the street. On-street parking is effective only when it is actually used.

MAJOR STREETS

Auto street with accommodation for bikes and pedestrians.

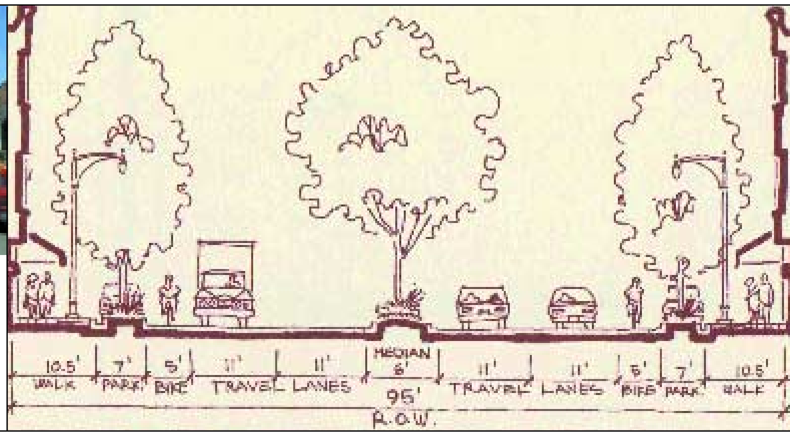


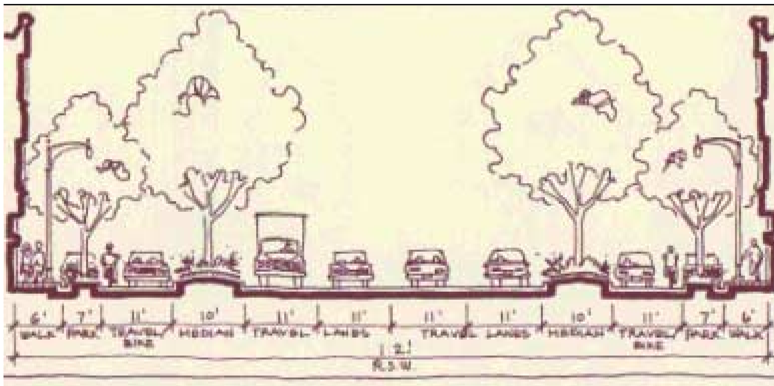


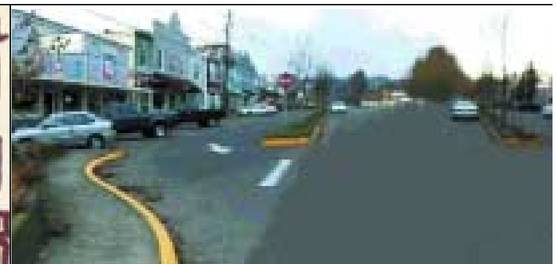


Streets for automobiles.

Multi-modal street with emphasis on non-auto travel.





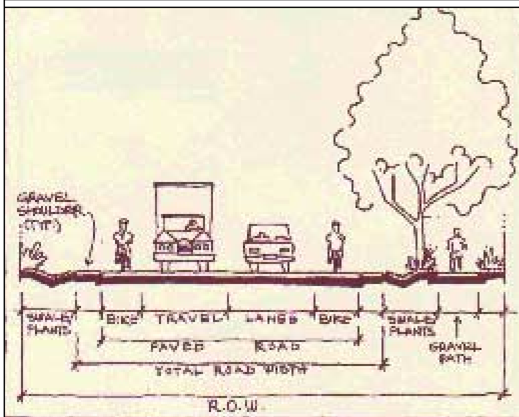


Multi-modal boulevard design.

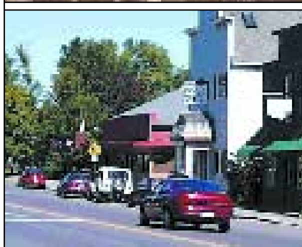
Streets that must carry heavy traffic can be boulevards

Wide streets that must carry a high load of traffic still can support an active and attractive pedestrian environment by converting them to boulevards. A multi-modal boulevard is a roadway with a center throughway, typically of four lanes, for fast through traffic. There are access lanes for local, slow-moving traffic on either side, separated from the main through roadway by tree-lined medians. The local access lanes usually include one or two rows of parallel or diagonal on-street parking. Pedestrian space on the sidewalks at the edge of the boulevard is augmented by secondary pathways on the medians, which also can include bike paths and transit waiting areas. Traffic moves slowly on the local access lanes, creating a third pedestrian-friendly environment.

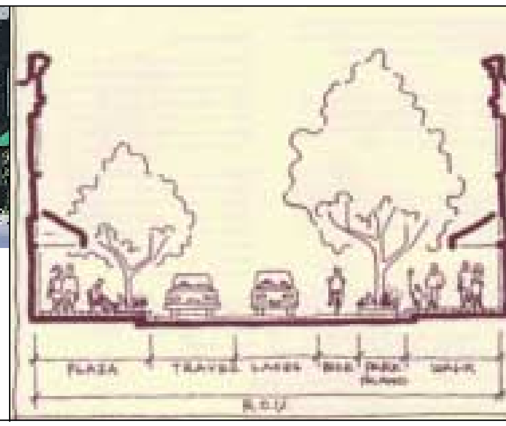
MINOR STREETS

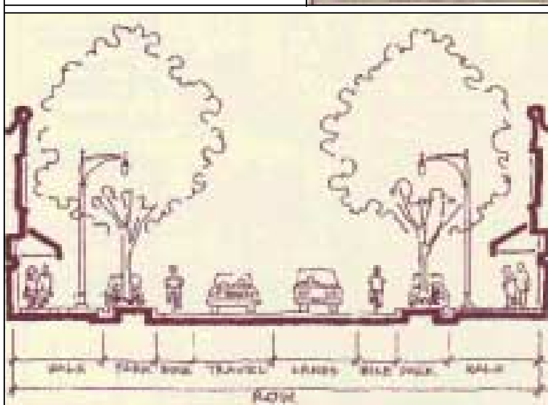


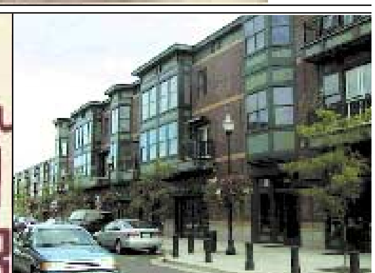
Low activity level.



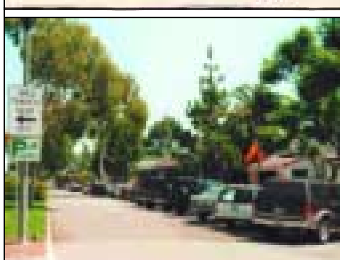
Moderate activity level.



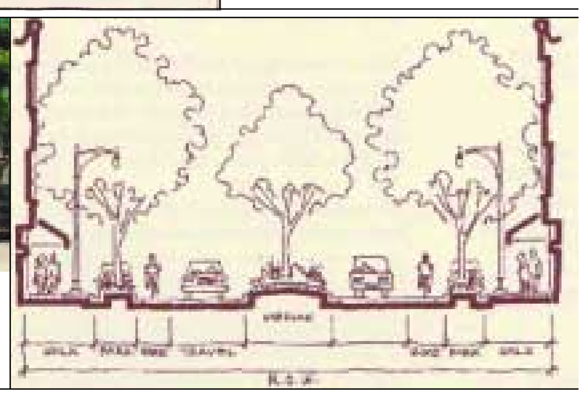




Higher activity level.



Higher activity level with traffic flow devices.

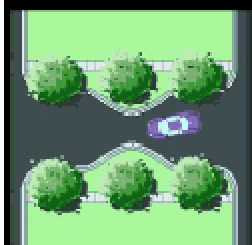


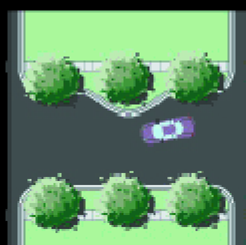
TRAFFIC CALMING ON EXISTING STREETS

“Traffic calming” measures such as “knock-downs,” where sidewalks are widened into the parking lanes to reduce pedestrian crossing distances, may be appropriate when it is not feasible or too costly to reduce an entire street’s width. The simple addition of on-street parking also helps narrow wide existing roadways.

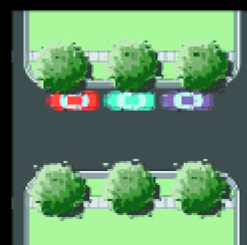
Drainage, snow removal and storage should be accommodated in the design and maintenance of these features. Access for emergency vehicles can be accommodated through design solutions such as mountable curbs on traffic circles and removable posts.

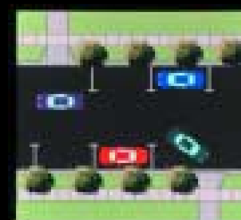
A standard source on traffic calming is the Institute of Transportation Engineers' "Traffic Calming - State of the Practice" by Reid Ewing.


Centered mid-block yield point

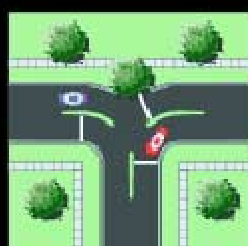

Offset yield point

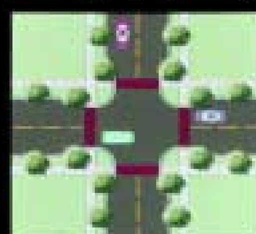

Knock-down

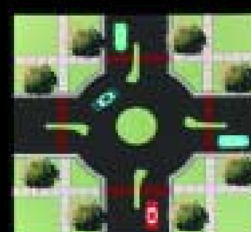

On-street parking one side


On-street parking both sides


Chicane


Modified intersection


Textured Crosswalks


Roundabout

PEDESTRIAN FRIENDLY STATE HIGHWAYS?

Can the walkability of State Highways be improved where they run through the main-street style shopping districts in communities in the Greater Wasatch Area?

This is a difficult issue that must balance, 1) maintaining traffic capacity on vital state routes and 2) maintaining the health and viability of communities’ historic main streets.

Envision Utah believes that these decisions should be based on a cooperative effort between local jurisdictions and the Utah Department of Transportation.

Points to consider are:

■ Communities are not just a link in the state highway chain, they are also destinations in their own right.

■ A basic role of the state highway system is to serve important local destinations.

■ Traffic capacity can often be maintained with slower traffic speeds. In addition to a friendlier walking environment, slower speeds likely improve pedestrian safety.

Park blocks in Sandy (top, Sandy Civic Center Mall); in Boca Raton, Florida (middle); and Portland, Oregon (bottom).

Consider park streets to calm traffic and increase the amount of on-street parking

A "park street" or "park block" is a street with a linear park at the center, with one-way roads running on both sides. They are an appropriate device to separate two-way traffic into a one-way couplet, with roads and on-street parking on both sides. They are successful at reducing traffic congestion from turning movements because they create more space for queuing. Extremely wide roadways can be retrofitted as park streets. Ideally, the planted center area of park streets should be at least 80 feet in width from inner curb to inner curb, to function as usable recreational space.

Configure schools to promote walking

Due to their land-intensive nature, schools (particularly high schools) should not be located at the most central, core area of a walkable community. Rather, they should be located at the edge of the typical one-quarter to one-half mile walkable area.

However, if a walkable district is largely residential and retail uses are not viable, a school may be located in a more central area so that its grounds and buildings are more accessible to the community. In such a case, sports fields, play courts and classrooms should be available in the evenings and on weekends for recreation, adult education and community meetings.

Although all schools should be conveniently accessible on foot, the greatest attention to detail is needed for elementary and middle schools because these youngest children need the safest walking routes to school. Schools that have bright lighting for evening outdoor sporting events may not be appropriate next to residential areas due to the noise and glare produced.

Set aside space for parks and open space

Parks, plazas and other open spaces serve as focal points for civic life, allowing a range of spaces for active sports and passive (sitting, people-watching) recreation. These spaces may be located adjacent to retail, office and other higher-intensity uses in mixed-use and commercial districts, as well as in quieter residential districts. They may be paved or landscaped.

The perimeter around a park should be surrounded by streets and building fronts to provide activity and informal surveillance. One notable exception is where parks abut sensitive lands or open space. In no case should a park be located behind buildings, away from public view and access.

Place transit stops and stations in the core

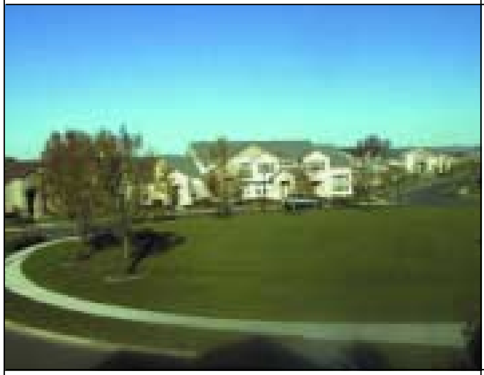
If there is transit service to a walkable community, the transit stops or stations should be located in the high-activity core. Parking lots, busy roads and other obstructions should not interrupt pedestrian and bicycle access to transit. Fences, berms and other barriers that impede pedestrian or bicycle movement should be removed. The road and pathway connections to transit stops or stations should minimize pedestrian travel distances.

Transit riders disembarking from the bus or train should be able to understand where they are and orient themselves easily through visual cues, views and landmarks.

The overall character of the transit station should be pedestrian-friendly with direct paths lined by street trees, landscaping and benches. Transit stops should be sited where the street is level, with a barrier-free sidewalk, and where there is space to build a firm-surfaced pad that can accommodate a wheelchair as well as standing passengers.

Shaping a Walkable Community in Privately Owned Areas

Following are some design guidelines for making privately owned areas, including residential, more appealing to pedestrians. While the street and public facility standards discussed in the previous section shape the public realm, the following site design and architectural standards shape the private realm. These standards apply to development on vacant, green-field sites as well as underutilized land in developed areas. These standards are basic guidelines necessary to achieve and enhance pedestrian access in a community.



Parks should be surrounded by buildings to provide activity and informal surveillance.

Design guidelines for mixed-use and commercial buildings

Use buildings to frame the street

Buildings in walkable communities should create a fairly continuous "street-wall," with minimal breaks for driveways, curb cuts, parks and plazas and side yards. Parking lots should be sited behind buildings, away from the street. Small parking lots along the sides of buildings are acceptable as long as they minimize their frontage and curb cuts along the street.

A regulatory device known as a "build-to line" that defines a maximum front-yard set-back (the opposite of the more common minimum setback) can be used to show on a map the segments of streets or blocks where buildings are required to be located at the street. Build-to lines are discussed further in "Methods for achieving walkable communities."

Minimize building setbacks from street

In walkable communities, buildings should be sited close to and face onto the sidewalk to create a more interesting walking environment. Ideally, commercial and mixed-use buildings should be located at, or within, ten feet of the public sidewalk. Residential uses may be set back somewhat, especially farther from the core.

Having primary entrances face and be accessible from the street helps create a walking-friendly neighborhood.

Retrofit existing commercial areas for pedestrian access

The modern commercial landscape is a familiar sight, with one shopping center after another arranged along a wide, sidewalkless street. Many of these strip commercial districts are successful economically, but they certainly make it difficult to get there on foot or walk around once you arrive. Strip commercial areas also may be fenced off from one another, to discourage anyone who is bold enough to walk from one to the next. Buildings are set back behind generously-sized parking lots. What can be done to make these areas more pedestrian-friendly?

■ ***Add continuous sidewalks.*** Sidewalks should be on both sides of the street, linking shopping centers and including landscaping with street trees and planter strips.

■ ***Improve crosswalks.*** Add or improve crosswalks and pedestrian crossing signals at intersections and between high-volume shopping centers to allow pedestrians to cross busy arterial streets safely.

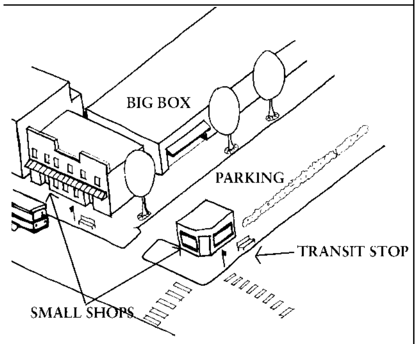
■ ***Remove fences between adjacent shopping centers.*** Explain to shopping center businesses that they will benefit from increased pedestrian patronage as people who park next door walk over to their shopping center.

■ ***Reinforce pedestrian connections through parking lots.*** Make it safer for people to walk from the sidewalk through parking lots up to building entrances. Solutions include painted or colored asphalt, different paving material or texture, raised walkways, shrubs, shade trees and other landscaping.

■ ***Make parking lots cooler.*** In a related vein, parking lots can get oppressively hot in the summer, as the black asphalt absorbs all the sun's heat. Regularly-spaced "orchard" trees can shade parking lots and make them more hospitable to walking.

Orientation away from pedestrians (top) and toward pedestrians (middle).

Street trees (bottom) complete the comfortable walking environment.



Infill "liner" buildings at the street can create a pedestrian-oritented district in the midst of large scale "big boxes."

■ ***Infill parking lots with small buildings that face onto the street.***
Businesses such as camera stores, cafes, and flower shops usually have a small square footage and could be sited at the street to make walking along the sidewalk a little more interesting and varied. This can be a great way to increase economic use of underutilized parking lots. Parking lots on streets that extend into neighborhoods should have the highest priority for this sort of infill.

Street-facing facades

The primary building entry and windows should be visible from a street. Street-facing building facades should not have large segments of blank wall (for example, no wider than 30 linear feet). Windows and entries should be used to break up facades into segments. A large proportion (for example, at least 50 percent) of the linear length of street-facing facades for non-residential buildings should contain windows, doors or arcades at all levels.

Where parking structures are located along pedestrian-oriented streets, they should contain shops or other inhabitable spaces. The frequency of garage doors or entrances to parking structures along pedestrian-oriented streets should be minimized. For example, no more than 30 linear feet of curb cuts to parking structures should be allowed along each block.

Minimize the dominance of parking

A compact, pedestrian-friendly setting can be created with the use of surface parking sited away from the street to the rear of buildings, with on-street parking in front. On-street parking in front of a building should be considered to help meet parking demand. Development at highest intensities would likely require structured parking.

To minimize parking costs and impacts, different uses (such as retail, office and entertainment) should share off-street parking spaces, particularly in mixed-use districts. By recognizing that peak demand occurs at different times for different land uses, shared parking facilities help minimize the amount of land and expense devoted to parking lots or garages. The Urban Land Institute's Shared Parking standards, or an equivalent, should be used to calculate the total number of shared parking spaces.

Streets in a community's center provide for the comfort of pedestrians and the needs of the automobile. On-street parking is an important component of a walkable street's design, providing a buffer between the traffic on the street and the pedestrians on the sidewalk. On-street parking should occur on all streets where structures front onto both sides of the street. Either parallel or diagonal on-street parking may be appropriate, depending on the street width, parking demand and traffic volumes.

Parking structures or garages are discouraged along walkable streets unless they include ground-floor retail, office or civic uses. Parking structures should not occur within 40 feet of a residence.

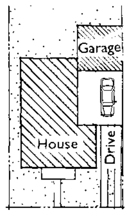
Parking lots for commercial and industrial uses should be sited away from the street and behind buildings, or to the side of buildings in long, narrow configurations that minimize the street frontage.

Where existing parking lots abut streets, they can be mitigated in several ways:

■ ***Connect building entrances to sidewalks.***
Some buildings, such as retail anchor stores, may have entrances that are behind parking **lots**, rather than right at the street. In these instances, entries should be linked to the street with connecting **walkways**. These walkways shou ld be tree-lined, landscaped, lighted and detailed for pedestrian safety and comfort.

■ ***Screen parking lots from the street.***
Use **landscaped frontages,** which may be landscaping, walls or trellises. However, design and siting of landscaped frontages should not provide ambush points or obstruct views. Walls and hedges should be 2-3 feet tall to offer screening while maintaining visual surveillance.

Parking for this bagel store on Salt Lake City's 15th East, is to the side, creating a pedestrian-friendly identity for this neighborhood.



Side Drive (Attached)

Recessing the garage behind the rest of the front facade helps create a street that is enjoyable to walk on.

Trees should be planted 30 feet apart, to provide a sense of a "street-wall" while avoiding the creation of ambush points.

■ ***Break up large parking lots.*** Connecting walkways and landscaping should be used to break up large parking lots into sections of no more than 300 spaces each.

■ ***Shade parking spaces with orchard planting.*** Parking lots must include one shade tree for every six parking spaces, spread uniformly throughout the parking area. Trees should be set into a tree well and protected by posts or tree guards.

Bicycle parking should be provided in easily accessible locations. The amount of bicycle space can be tied to levels of use, which often is a function of the square footage of building space. For example, one bike space is appropriate for every 2,000 square feet of building floor area. Bicycle parking should be visible from storefronts or office building front doors to improve security for parked bicycles.

Design guidelines for residential buildings

The following design guidelines are recommendations to create pedestrian-friendly residential buildings:

Site homes to frame the street

With the exception of accessory dwelling units, the primary entrance of every dwelling should face and be accessible from a street, park or other open space. Entries should not be deeply recessed or hidden. An accessory unit is a modest sized living space built at the rear of an existing single-family lot – either freestanding or over a garage.

Minimize view of garages and parking from the street

Garages should be set back from the street-facing facade. Garages should comprise less than 40 percent of the width of the total street-facing frontage. Alley fed garages are often beneficial in meeting this standard. Tandem parking garages (a narrower garage where one car is parked behind another) make up one device for reducing the impact of garage doors. They should be permitted and encouraged.

Parking for attached residences with shared unit entrances, such as apartment buildings, may be provided in several acceptable ways, including:

- Within the structure or behind a street-facing living space, retail or home office space
- Underneath the living space of a residence
- Surface parking behind a structure

Provide variation in housing mix

A variation in housing mix (architectural styles, lot sizes and building types and sizes) in walkable communities creates greater visual interest along sidewalks for pedestrians. In contrast, streets lined with identical homes and blank garage doors make walking less appealing. In new residential areas, a mix of housing models and architectural treatments are recommended.

Methods For Achieving Walkable Communities

This section discusses ways to guide new development and retrofit existing development to be more pedestrian friendly. Physical plans and standards can direct public and private actions. Inducements, such as financial incentives, streamlined approvals and site preparation, can help encourage developers to pursue innovative practices.

Integrate the vision for pedestrian access into the community master plan process

Stakeholders – citizens and public officials – must work together to assure that the vision for a walkable community is clearly articulated and included among the goals for the community general plan. Clear goals permit stakeholders to see how all elements of the plan fit together. A clear plan will help ensure that redevelopment follows the initial vision over the years or even decades. The community can monitor the general plan as parcels redevelop, streets are repaved or other opportunities arise to implement portions of the plan. The plan can include maps that show the planned street network, open space and land uses and explain the desired quality of the urban landscape.

▶ **A master street plan specifies the general location of future streets and intersections to ensure connectivity. Another tool is a maximum block size limit to prevent the very large blocks that reduce the connectivity of a street network. Maximum block standards generally range from 4 to 8 acres.**

Street Connectivity

Master street plans

Too often, street locations in large-scale developments are left to the discretion of developers, resulting in a disconnected street system that makes walking and biking difficult. In older existing areas, streets may be too wide or the street network may have become disjointed due to development of multi-block complexes that straddle streets. In either case, a jurisdiction can do much to shape a walkable environment by defining the alignment and design of streets through the master street plan element that is included in the general plan.

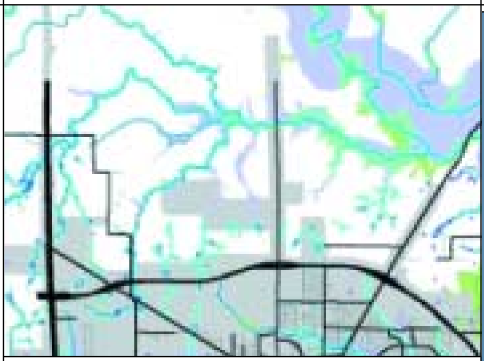
By identifying the alignment of all "connector" streets (streets that connect, rather than "collector" streets that funnel traffic onto arterials) in the master street plan, a jurisdiction can ensure a connected network that minimizes walking and biking distances between destinations. The network of streets must be strong to distribute traffic to a point where traffic volumes are low enough for street-facing uses. While commercial streets can tolerate higher traffic volumes than residential streets, major streets that do not support street-facing uses are not appropriate to walkable communities. A master street plan will define the network of streets, such as arterials, major and minor collectors and local streets.

Maximum block sizes

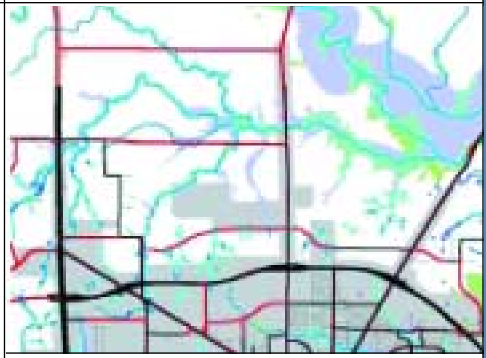
Developers of large residential areas prefer some leeway in the location of local streets, as this gives them more flexibility in selecting block size and lot widths and depths. Instead of specifying the location of future intersections, the jurisdictions may adopt maximum block sizes and connectivity requirements (such as no cul-de-sacs, or pedestrian connections from cul-de-sacs to through streets) associated with the various local street types to build additional flexibility into street network design. Other general goals also should be tied to general street design standards. For example, it may be important to specify that local streets maintain vistas towards important views or parks.

We recommend a maximum block size of about 600 feet per side, though this can be stated in acreage, for example eight acres, to give flexibility from gridiron to curvilinear or radial street patterns.

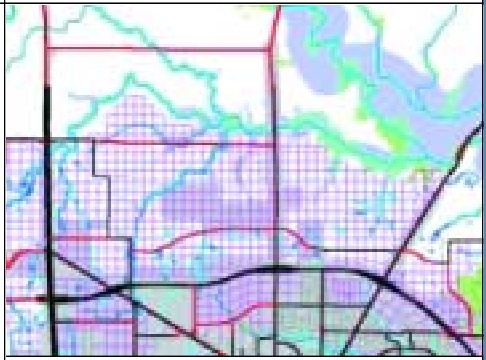
Environmental Constraints



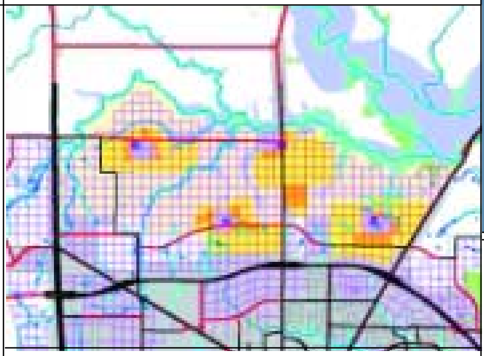
Future Arterials



Street Connectivity Grid



Future land uses and neighborhood centers



▶ **It is important to link together all the elements that help create a walkable community.**

■ This series of maps shows the development of individual elements of a comprehensive plan. After existing conditions are identified, environmental areas are considered, new arterial streets are planned, a minor street connectivity grid is outlined at a 600 foot interval between intersections, and comprehensive land uses are designated to locate future neighborhood and town centers.

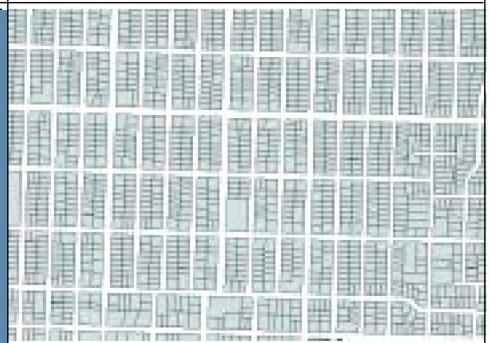
■ With this kind of a plan, as developments occur, they become part of an overall community, fitting together like pieces of a jig-saw puzzle. Without this kind of planning, cities can grow to be just an unrelated collection of developments.

▶ **Connectivity comes in many forms.**

■ **Simply because a master street plan lays out a connectivity pattern, the streets inside a development do not necessarily need to be arranged in a gridiron.**

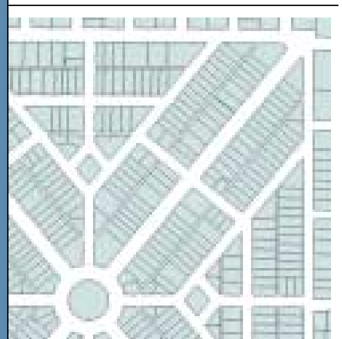
■ **The important thing is that there be dead-end streets at the perimeter of the development where the master street plan specifies connections to future developments. This enables each development to hook together in a seamless street network.**

■ **Connected street patterns may be in a gridiron, curvilinear, organic, radial, or any other style that provides for internal connections and external linkages.**

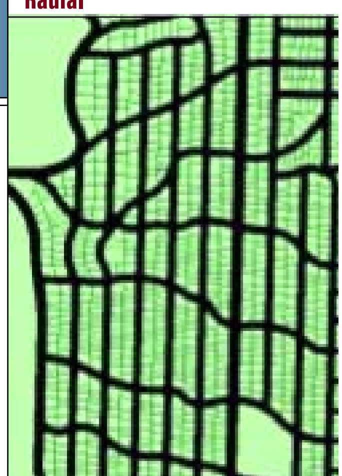


Gridiron

Curvilinear



Radial



Organic

Street network tied to future land uses

Future land uses or future zoning should be outlined in the comprehensive plan to ensure the highest intensities in the neighborhood are at the core of the street network and that there is a diversity of land uses throughout the neighborhood. Both mixed uses and a neighborhood core naturally entice people to walk from place to place.

Block standards

In contrast to a comprehensive plan approach that addresses each element of a walkable community separately, a block standard is a tool that combines a set of policy options together into one package. Minimum block sizes, densities, parking requirements; site design considerations such as building orientation, height; and allowable land uses are linked with each other in a coherent policy framework. Depending on the location of the prospective site in the community, a developer can choose from a variety of block standard packages. An example from Orlando, Florida, is included.

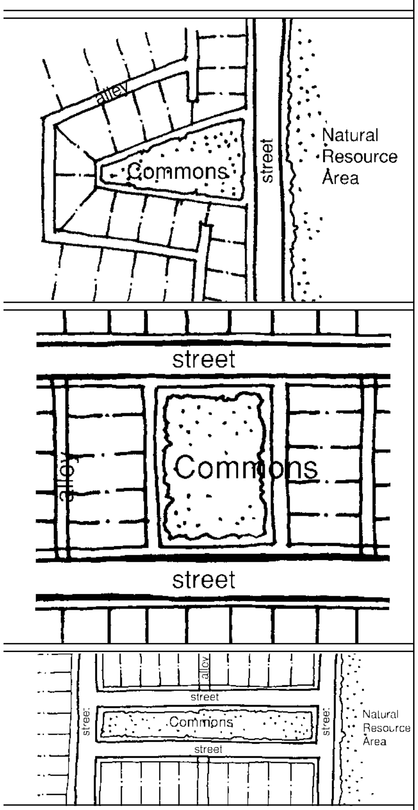
BLOCKS STANDARDS FROM ORLANDO, FLORIDA

Within the Town Center or Village Center locations, there are block standards for Mixed-use, Commercial, Residential, and Civic Blocks.

Commercial blocks, for example, may be no more than 30% of the area of a Town Center.

	Town Center	Village Center
Mixed-Use Blocks	15-40% of Center	15-40% of Center
Mix of Uses*	Retail, Services, Restaurants, Office, Cinema, Grocery, Hotel, Residential, Civic, Park/Plaza.	Grocery, Local-Serving Retail and Services, Restaurants, Gas Stations, Professional Offices, Residential, Civic, Park/Plaza
*30-80% retail, cinema, or hotel required each block, 20-70% other.		
Maximum Block Size	7 acres	7 acres
Minimum FAR	FAR: 0.4	FAR: 0.3
Minimum Frontage	65% of each street	65% of each street
Parking Ratio	3 spaces : 100 sf.	3 spaces : 100 sf.
Building Height	2 to 10 story	1 to 3 story
Commercial Blocks	0-30% of Center	0-30% of Center
Allowable Uses	"Office, Retail (10% Max.)"	"Office, Retail (10% Max.)"
Maximum Block Size	7 acres	4 acres
Minimum FAR	FAR: 0.4	FAR: 0.3
Minimum Frontage	65% of each street	65% of each street
Parking Ratio	3 spaces : 100 sf.	3 spaces : 100 sf.
Building Height	2 to 10 story	1 to 3 story
Residential Blocks	30-75% of Center	40-75% of Center
Allowable Uses	Apartments, Condos, Townhomes, Duplexes, Bunglows	Apartments, Condos, Townhomes, Duplexes, Bunglows, Small lot single-family
Maximum Block Size	3 acres	3 acres
Density Range	7 to 50 du/ac.	7 to 25 du/ac.
Minimum Frontage	65% of each street	60% of each street
Parking Ratio	1.5 spaces/unit	1.5 spaces/unit
Building Height	2 to 5 story	1 to 3 story
Civic Blocks	10% of Center	10% of Center
Allowable Uses	"Parks, Recreation, Civic, Day Care"	"Parks, Recreation, Civic, Day Care"
Maximum Block Size	3 acres	3 acres

Examples of park configurations appropriate in a walkable community.



Mixed-mode street design

The jurisdiction should provide cross sections for all planned street types – both major streets with specified alignments and local streets with flexible alignments. The cross sections should show overall right-of-way widths, roadway and sidewalk widths, on-street parking, street tree and planting locations and other features such as medians.

Examples of street cross sections appear in this chapter under "Minimize roadway width in street section design."

The process of developing street designs should include feedback from developers and public works, fire and police departments. At the same time, communities should recognize that developers and public servants might require some education about the way mixed mode streets function. Street practices and standards frequently focus on the risk of two vehicles colliding, rather than risks to people on foot. This has led to the practice of wide roadways, despite the resulting higher speeds and subsequent serious or fatal injuries. Emergency vehicle access has been another overriding concern that still can be achieved with street dimensions that are narrower than is standard practice.

Parks and open space elements of the master plan

A parks and open space element should specify locations of important parks, plazas and other open spaces. This element of the general plan may show specific locations of these spaces or simply require a certain acreage or percentage of land to be devoted to open space within each neighborhood. No resident should be more than a few blocks from a small park; this may require slightly higher maintenance costs than for larger remote parks. Parks may be publicly or privately owned and maintained, but all should be publicly accessible.

Small area plans

Public agencies and jurisdictions can help attract developers and other private parties by creating clear pedestrian-oriented vision of development specific to a one-half-mile district. A small area plan provides the framework around which the community can adopt zoning, capital investment and development strategies for an area.

A small area plan can identify the types and densities of land uses and infrastructure improvements, including street networks, within a project area. The guidelines in a small area plan should be flexible and adaptable to ensure that the type of development can change in response to market conditions.

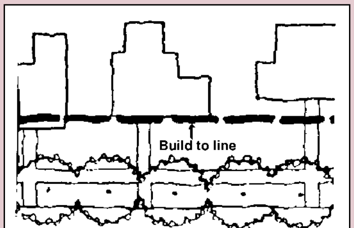
Regulatory maps

A regulatory map governs the siting and location of public investments, such as streets and parks, as well as private development. A regulatory map may be part of a small area plan, or it may be a stand-alone document. Regulatory maps show proposed zoning, the locations of required streets and the street type, required locations and/or sizes of parks, civic plazas or other open spaces and locations of "build-to lines."

Strategies for incremental change

While creating a walkable community in an underdeveloped area is fairly simple, it can be a challenge to transform existing automobile-oriented suburban areas and many urban areas to walkable environments. Such a transformation requires gradual, incremental strategies. There are many physical design strategies a community can use to improve existing areas, while working at whatever pace the community's budget and staffing allows. Community planners should work with local citizens to determine which approaches will work best in their area.

BUILD-TO LINES



VARIATIONS FROM THE BUILD TO LINE

Bringing building fronts close to the edge of streets enhances the continuity, attractiveness and intimacy of pedestrian spaces. Build-to lines are a conceptual device that may be shown on a regulating map. The build-to line defines a location at which (1) buildings should front the street, and (2) those buildings should be built within a maximum distance from the sidewalk.

Specific regulations for build-to lines:

- Where specified, a build-to line is at the edge of the dedicated right-of-way, where private property meets a publicly-accessible sidewalk or path.
- To contribute towards meeting the build-to requirement, building facades should be sited within 0 to 5 feet of the public right-of-way.
- The primary entries to buildings should face onto build-to lines (rather than onto rear or side parking lots or alleys).
- Parks or plazas may be used to satisfy up to 20 percent of the build-to requirement and should be landscaped with shade trees and furnished with seating areas.
- Parking lots, driveways, loading zones, and other auto-related areas do not count toward the minimum build-to requirement.

For example:

- Plant street trees.

- Transform disconnected street grids by adding new streets or pedestrian connections as parcels redevelop.

- Use "traffic calming" to narrow streets, slow traffic and improve the pedestrian environment on existing streets.

- Create a pedestrian area on wide, traffic-heavy streets by changing to a boulevard design. Boulevards separate through traffic from local traffic.

- Gradually infill parking lots and low-intensity areas with street-facing buildings as parcels redevelop.

- Add small-footprint "liner" retail stores along the street in front of big box parking lots that are expected to remain. For example, cafes occupy small footprints but have high activity levels and create more interest for pedestrians along the sidewalk. Because these buildings are small and single-storied, they do not encroach significantly on the visibility of the anchor stores from the street.

- Add visual interest to large, bland buildings over time by adding doors, windows, trellises and architectural features.

- Adapt attractive older buildings to new uses rather than tearing them down. For example, many old warehouse buildings are suitable for conversion to loft condominiums.

- Allow construction of accessory (secondary) and live-work units in single-family residential neighborhoods. To minimize a crowded appearance, secondary units should be allowed only on single-family lots that are above a minimum size, such as those greater than 5,000 square feet.

Historical mixed-use building in Salt Lake City. Walkable communities are a return to this traditional from of development.

PARK CITY'S HISTORIC DISTRICT DESIGN GUIDELINES are a good example of architectural standards that promote pedestrian friendly development. The guidelines promote street-oriented storefronts with large display windows and signs oriented to walking traffic. For more information contact the Park City Planning Department at 435-615-5061.

SALT LAKE CITY'S D-1, CENTRAL BUSINESS DISTRICT zone guides the development of walkable downtown streets by bringing buildings within 5 feet of the front lot line, specifying a minimum amount of ground floor glass, and by encouraging mid-block walkways.
For more information contact the Salt Lake City Planning Department at (801) 535-7757.

RIVERWOODS is a walkable commercial development in Provo with a proposed townhouse and live-work housing component. Communities can encourage development similar to Riverwoods by being flexible with regard to setbacks and minimum lot sizes. PUD (Planned Unit Development) zoning, performance subdivisions (that use a unit per acre standard instead of minimum lot sizes), and small area plans are flexible regulatory mechanisms that can be used without a complete zoning code overhaul. These tools can help developers build projects that would otherwise fail to meet traditional zoning standards while giving the local government valuable design oversight.

Riverwoods

The Utah Quality Growth Commission allocates planning grants to local governments throughout Utah. These grants provide vital resources for communities to plan for quality growth. Any Utah town, city or county is eligible to apply. The grants are awarded annually, and require a 50% match. Past grant recipients have conducted quality growth surveys, completed downtown revitalization plans, open space plans, urban design standards, and various other planning projects.

Contact the Governor's Office of Planning and Budget for more information at (801) 538-1619.

Summary

Walkable communities are keys to Envision Utah's Quality Growth Strategy of managing future growth and maintaining the high quality of life in the Greater Wasatch Area. Walkable communities return to the wonderful pattern of the traditional small town, with friendly neighborhoods, a regular network of tree-lined streets, porch-front homes and street-oriented commercial buildings. Walkable communities range from largely residential neighborhoods, including some retail and local services, to "main street" or "downtown" environments containing a mix of uses. Whatever their form or character, these walking-friendly areas make any community a better place to live, work and play.

Traditional mixed-use housing in an historic warehouse in Salt Lake City.

4 Reuse and Infill

What is Reuse and Infill?

Although Utah has been settled for more than 150 years, most of the structures in the Greater Wasatch Area (GWA) are on land that had never been developed before – some former farmland, most virgin desert. However, it is natural for a city as it matures to experience increased building activity on land that has previously been developed – to have an increase in the reuse of developed land.

The Rose Wagner Theater, which uses previously developed land, is helping establish a cultural identity in the recycling west side of downtown Salt Lake City.

The reuse of urban land is most evident in ancient cities, such as Rome, that have been inhabited continuously for more than 1,000 years. Much of Rome is built on the remains of previous buildings that had been built on the remnants of yet older buildings, and so forth. The original undisturbed soil for most of Rome is between 50 and 100 feet below the surface. The depths are composed of the rubble of centuries of reuse.

As development in the Greater Wasatch Area ages, the process of land reuse will accelerate. The central blocks of many Wasatch Area cities, such as Salt Lake City Provo, Ogden and Brigham City, are well over 100 years old. A few structures are pioneer originals, most have recycled once or maybe twice, but many are again facing deterioration and obsolescence. The Gateway development in downtown Salt Lake City is evidence of increasing land reuse. Gateway is the largest private development in Utah's history and is occurring in a portion of the city that had long since lost its purpose and functional value.

Land reuse is what keeps cities and towns from deteriorating after their first buildings age and become obsolete. Regions and cities that rely solely on the development of vacant land to absorb growth soon develop the "rotten core" syndrome: all the investment and growth occurs at the edge while the older parts of the city deteriorate, as obsolete buildings and crumbling infrastructure make the center less livable. People flee the deteriorating center, reducing the population and leaving behind the very poor who cannot afford to move. Although this has been the fate of many cities in the United States, it is not an inevitable consequence of an aging center. There are many examples of cities, both in the United States and worldwide, that have accommodated growth with a combination of development on vacant land and reuse of older parts of a city.

While some historic buildings are worthy of preservation, many of them – especially one-story commercial buildings – deteriorate or become outdated in a 30- to 50-year time-span. Some developments, such as strip commercial centers, malls and big-box retail developments, are so tied to a particular style of retailing that when that marketing concept goes out of fashion, there are few alternative uses for the buildings.

There are many benefits to reuse as a strategy to accommodate growth, in addition to the continuing maintenance of a healthy community. Having a robust downtown and older close-in suburbs helps a region stay economically vital. In recent years, suburban growth in the Greater Wasatch Areas, while still attractive to many, has been coupled with an increasing level of negative growth-related impacts. Air pollution has worsened, commuting times have increased, and traffic has become more congested. In addition, the prospect of continually increasing highway capacity to accommodate growth on the edge has proven to be extremely expensive and disruptive.

Reuse isn't necessarily demolition and new construction. Many older buildings can be adapted to new uses.

Reuse can help the region stay economically vital by making use of the extensive infrastructure already in place in developed areas, mitigating traffic increases, cutting air pollution and reducing the need for expensive new highways.

Reuse and infill development are valuable tools to create and improve walkable neighborhoods and to meet the housing needs of the community. Reuse often takes parcels with relatively small and underutilized buildings that do not have pedestrian-friendly characteristics, and replaces them with buildings that add housing and vitality. Infill development does much the same by utilizing relatively small vacant parcels that otherwise detract from pedestrian access in the neighborhood.

What this chapter covers

Envision Utah's Quality Growth Strategy encourages reuse and infill as important methods to manage the growth that is coming to the Greater Wasatch. This chapter focuses on tools for overcoming obstacles to reuse and for planning renewal of existing areas. Specifically, this chapter will:

- Discuss the development opportunities that exist through reuse and infill. We will primarily address a type of development that is both relatively dense and contains a mixture of complementary uses – residential, retail, office and more. This type of development can contribute to the creation of walkable neighborhoods. Although mixed-use, medium- to high-density development is traditional in older, established parts of most cities, it is very different from the auto-oriented development that has been prevalent in the U.S. and Utah since the 1950s.

This land reuse project in Park City extended the historic Main Street.

- Define infill (development on relatively small parcels that are vacant within an area that is generally developed) and reuse (replacement of a building or the retrofit and expansion of a building).

- Outline the conditions necessary for reuse.

- Look at actions that a community can take to encourage or participate directly in infill and reuse.

Obstacles to reuse and infill

While the idea of infill and reuse is appealing, there are many obstacles to their implementation. These obstacles can be grouped into four categories:

Legal obstacles, such as zoning codes

Often, zoning codes are drafted to address development on vacant land and to preserve existing land use patterns. However, the process of reuse is fundamentally different from development on vacant land. Vacant land typically produces little or no income, and the owner often has a strong economic incentive to develop. In addition, on vacant land, it is comparatively easy to adapt a proposed development to comply with a variety of zoning regulations.

Reuse can help improve the walkability of a community. This bookstore in Sugarhouse is part of a project that recycled low intensity auto-oriented retail with higher intensity uses oriented to both autos and pedestrians.

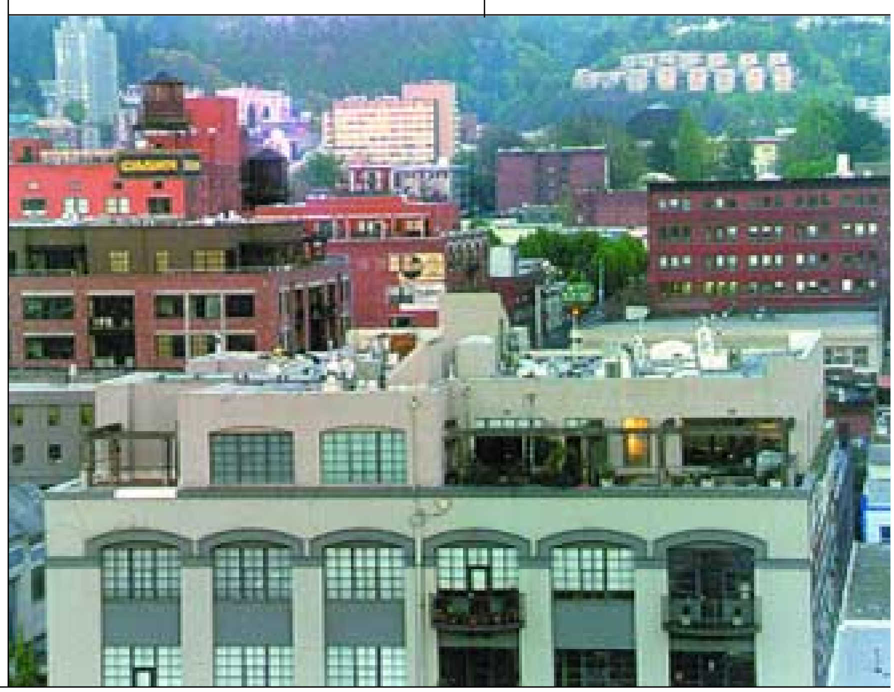
In contrast to vacant land development, reuse must evaluate existing structures and uses on a parcel to determine their suitability for building or land reuse. Reuse typically involves costly demolition or retrofitting. In addition, even an obsolete building may still produce some income stream, increasing the cost of property acquisition. Finally, because of the existing built environment, there may be limitations on compliance with requirements that are common in suburban zoning and building codes. Local governments that seek to encourage reuse need to be sensitive to the realities of developing on typically small lots in a built environment, and adapt their zoning to these logistical concerns. Governments that do not adjust their zoning and other regulatory standards risk inadvertently discouraging or eliminating the opportunity for reuse.

Lack of investment in adequate infrastructure

The growing parts of a region often monopolize the available capital for infrastructure investment. This situation leads to deferred investment in needed sewer, water, street and other infrastructure maintenance and upgrades in developed areas. Cities are then tempted to ask developers of potential reuse projects to shoulder the complete financial burden of needed infrastructure improvements. These costs can make reinvestment in developed areas prohibitively expensive.

Zoning is often drafted with development of vacant land in mind.

Standard yard setbacks, parking requirments and building codes are often too rigid and stringent for land and building reuse.



▶ **Bountiful's Lakewoods helps demonstrate that reuse need not be limited to the larger cities in the Greater Wasatch Area.**

Market perceptions

Promising reuse areas frequently suffer from a rundown reputation. Many of the most feasible areas for reuse are characterized by abandoned buildings, marginally profitable businesses, rundown housing and a concentration of poverty. The very reason they are feasible to redevelop is that the structure is obsolete and ready for change. However, investor confidence may erode if effective efforts are not made by the public sector to reverse the course of decline.

Environmental pollution from prior uses

Earlier industrial or commercial development sometimes leaves contaminated land that must be cleaned to federal or state standards before reuse can be allowed to take place. Well-intentioned laws designed to rid land of contaminants may place the financial burden on new development and delay the permit approval process. In some cases, these added costs may make reuse not feasible without support from the local government.

The Lakewoods lofts in Bountiful combine retail, office and residential uses in a former furniture store. The original building is over 100 years old and began as an opera house.

What is the difference between reuse and infill?

Reuse is the recycling of existing built land with new structures and uses. It can occur: (1) without government intervention (through private-sector action alone), (2) through private-public partnerships, or (3) through direct government action. The term 'reuse' also refers to the reuse of significant but underutilized buildings or additions to existing buildings. Land reuse and building reuse pose most of the same challenges and offer similar advantages.

Reuse, by its nature, is relatively expensive. For example, it involves purchase of existing structures with the land and involves either demolition or building rehabilitation costs. As a general guideline, reuse will occur without government participation if: (1) there is sufficient market demand, and (2) permitted zoned densities are significantly higher than the density of the existing structures on the sites. Having zoned densities significantly higher than existing densities gives a substantial financial incentive to a property owner to redevelop.

Unlike reuse, infill occurs on smaller tracts of vacant land in otherwise developed areas. For example, infill may occur on small, isolated parcels that have never been developed, on surface parking lots, on land that was occupied until structures were removed or on land partially occupied by development but with a significant portion of the parcel vacant.

Advantages of reuse and infill

While both infill and reuse may involve higher costs than new construction in terms of private-sector expenses, a big advantage is that infrastructure systems and services exist and are nearby. When all of the costs to the community and region are calculated, reuse and infill are often less expensive than growth on the urban fringe. Advantages include:

■ ***Reduced land consumption.*** When older areas are abandoned in favor of vacant land development, growth occurs –

▶ **A community that wishes to encourage reuse should be careful to avoid overzoning. Zoned densities that are significantly higher than justified by market demand result in land speculation and "hold-outs" that work against reuse.**

Reuse preserves vacant land by recycling developed land and saves a community's financial resources by utilizing existing infrastructure. This is an infill/reuse project on Salt Lake City's 9th East.

▶ **Non-walkable redevelopment and infill has many advantages, but new development or reuse in older areas must be combined with pedestrian-friendly characteristics and densities to help reduce vehicle use and congestion.**

typically at low densities and on farms and other natural areas. This increases a community's land consumption and can lead to what is commonly called "sprawl." Reuse attracts new growth to land that has already been developed, preserving land by recycling it.

■ ***Decreased automobile use.*** If built in a pedestrian friendly form (see the preceding chapter), or near high-quality transit, reuse and infill can increase walking, biking and transit use, thereby reducing auto use and the resulting pollution. Reuse and infill often occur in the older areas of our communities where there is an interconnected road system, high-frequency transit and other pedestrian friendly features.

■ ***Use of existing infrastructure.*** Reuse and infill take advantage of existing infrastructure systems, saving the community financial resources. Areas of historically intense development have potential for reuse. After the area declines, and as household sizes shrink, much of the infrastructure is left unused. New construction and reuse in these areas can take advantage of this underutilized infrastructure and the investments that already have been made. (Please note that, in some cases, infrastructure maintenance has been deferred and this expense must be met.)

■ ***Revitalize neighborhoods and commercial areas.*** Reuse and infill often improves the health and appearance of existing areas. New residents and businesses typically increase property values and improve the overall viability of an area.

These infill projects help reduce congestion by encouraging walking and through their locations on high-frequency bus routes.

The Dynamics of Reuse

Reuse can occur when a potential project will generate enough income to offset all development costs as well as the risk involved. A careful determination of the likelihood of reuse of a particular site can be a complex task, but communities can review several of the preconditions of reuse to ensure that the public sector is doing what it can to encourage the private sector to engage in land recycling.

How to estimate reuse potential: Compare reuse costs with potential revenue

A local government can analyze parcels for potential reuse by comparing potential costs with potential revenues. This type of analysis shows the effects of zoning and parking policies on development financial returns to inform a community how zoning parameters might change to encourage reuse. (The details of how to conduct this analysis, and spreadsheets to aid in the work, are included in the "Model Codes and Analysis Tools" workbook.)

One of the key factors determining potential reuse of a site is the estimated revenue after reuse. In planning for a specific area, careful attention can be given to market demands and expected rent levels. However, in a community-wide reuse analysis, this often is not feasible. A community-wide reuse analysis must necessarily set aside the issue of market demand to simply compare revenue with expenditures.

Revenue

Revenues are estimated from calculating the allowable development permitted, given the combined effect of all codes and zoning regulations. The average rent levels in the community for the type of use expected (residential, retail, office) should be used. The following are factors used to determine the potential rent that can be generated by a new building:

Zoning that allows mixed commercial with residential uses helps ignite reuse more than zones that permit residential uses only.

Often more residential reuse will occur if it can "piggyback" more profitable retail reuse.

▶ **Envision Utah's "Model Codes and Analysis Tools for Quality Growth" includes a simple spreadsheet that calculates the permitted densities that are the combined result of a community's regulations.**

Minimum parking requirements have a significant but less than obvious effect on development intensity.

Surface parking competes with the building footprint for available lot space.

■ ***Allowable densities.*** Maximum density regulations often are not the limiting factor in development. Sometimes the cumulative effect of regulatory heights, parking, setbacks and landscaping acts to limit allowable densities below the specified maximum density in the zoning code.

■ ***Rent per square foot.*** Once the square footage of developable area is calculated, and the amount of rent per square foot researched, the total revenue is simply rent per square foot multiplied by total floor area.

Costs

Development costs include property acquisition costs, demolition expenses and construction costs. Acquisition costs can be estimated using tax assessor's data. Demolition and construction costs are best estimated using expert opinion or statistics tracked by the construction industry.

Simply put, reuse occurs when it makes financial sense. A parcel with estimated return on a potential investment of 10 to 30 percent is expected to redevelop in the long term if there is sufficient market demand. If few or no parcels are estimated to have reuse potential in an underutilized area, a community can try a number of techniques to increase reuse potential. A community can more easily affect potential development revenue than expenses in its efforts to encourage reuse. Therefore, the first order of business is to determine if the development density allowed is too low to attract investment and, if it is, to consider modifications to zoning regulations that will be appropriate for the surrounding neighborhood.

Removing regulatory obstacles

Parking

In many communities, off-street parking regulations have the most impact on limiting development densities. Developers in most of the Greater Wasatch Area prefer surface parking because land is relatively inexpensive, and structured or tuck-under parking is four to five times more expensive per space. However, surface parking competes with the building footprint for available lot area, reducing development intensities. The more surface parking on a site, the less room there is for the footprint of the building. One way to address this dynamic is to lower artificially high minimum parking requirements. Lower minimum parking rates do not necessarily result in less parking supply, but enable developers to balance parking supply to demand. The market regulates the amount of parking supply. Developers and property owners have a natural incentive to match parking supply with demand as they try to reduce development costs (by decreasing parking) while ensuring there is enough parking for the development to be successful. The increased densities that result from less parking help make for a more connected urban fabric where people are more enticed to walk and take transit.

Landscaping requirements and minimum setbacks

While greenery is attractive, excessive setbacks and landscaping standards inhibit reuse and pedestrian activity. The most appropriate open spaces in walkable neighborhoods are active places for recreation and public gathering. Large green buffers between buildings and the street increase walking distances without providing usable open space.

Maximum height limits

Place a low priority on increasing maximum height limits. Increasing height limits rarely increases densities as much as reduced parking and landscaping requirements. In addition, increasing heights can be controversial as taller buildings may be incompatible with existing development. Typically, most areas can achieve reuse with mid-rise (3- to 6-story) development. In fact, some of the world's most walkable cities are built at this scale. High-rise developments can provide spectacular views and add an element of luxury housing, which can revitalize an area, but mid-rise height limits with modest landscaping and parking requirements do not present regulatory obstacles to reuse. Coupled with appropriate design controls, mid-rise buildings produce a very pedestrian friendly and inviting urban environment.

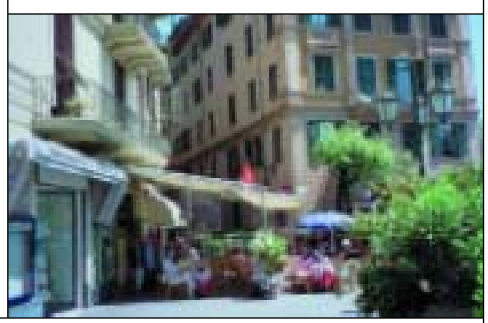
▶ **In close-in areas served by transit, lower rates of parking supply enable developments to be more walkable. Attractive, pedestrian-oriented buildings and streets encourage people to use the available transit by making the inevitable walk from transit to destination more pleasant.**

Zoning need not permit height limits greater than 3 to 6 stories to achieve vibrant reuse. This area in Geneva, Switzerland, was recycled in the 1950s and 60s. In good weather this sidewalk cafe occupies on-street parking.

Developing a Reuse and Infill Strategy

The aforementioned analyses and techniques can reveal the areas with the most reuse potential, a necessary first step in determining the best areas in which to implement an infill and reuse strategy. Two ingredients that are essential in a successful reuse strategy are a relatively high level of reuse opportunity and supportive regulations. However, as with baking a cake, it is how all ingredients are assembled that determines success.

Often, one of the chief obstacles to overcome in redeveloping an area is a perception, sometimes quite justified, that the area is in decline. When an area is considered undesirable, market rents are generally below the point at which potential private investment would be profitable. In these cases, a series of public investments, properly placed, can help change the perception of an area and thereby increase private interest in it. Investments and pilot projects need not be large in scope. In fact, a small and very successful pilot project that exemplifies the vision for the district will do more to change market perceptions than a large project that attains only a modest success.



Santa Maria Liguria is a small Italian city that exists at a density over 200 households per acre, yet most of the buildings are between 3 and 6 stories. Note that most of the architectural details are simply painted on. The key to the town's success is its friendly streets and quaint plazas.

Choosing areas to focus efforts

High financial returns (low potential expenses and high expected revenues) are not sufficient to warrant public investment and a focused reuse strategy. At least three to four of the following characteristics also should be present to warrant public effort:

- ***Raw financial potential for reuse as indicated by analysis.***

■ ***Underutilized infrastructure.*** Areas where infrastructure sits underutilized because it was constructed for the historically peak activity in the district.

■ ***Pedestrian-friendly physical characteristics.*** Areas that either currently have or have the potential for connected streets, street-oriented architecture and moderate to low levels of traffic.

■ ***Reuse would further other neighborhood revitalization objectives.***

■ ***Close to frequent transit service, in addition to adequate automobile access.***

■ ***Unmet housing demand.*** As discussed in the chapter "Meeting Housing Needs," many communities in the Greater Wasatch Area are expecting to have a shortfall of elderly-friendly (low yard maintenance) and less expensive owner-occupied housing types such as townhomes and condominiums. Reuse that includes housing can help meet this need.

■ ***"Character."*** This is that hard-to-define quality that makes an area unique. Character can be fostered to give a district a unique identity and to help develop market interest. Sometimes this quality stems from the presence of historical buildings with potential for reuse. Sometimes it is a unique combination of businesses: a series of antique shops, an entertainment district, businesses oriented to authentic local or ethnic products or close proximity to a large regional facility such as a university campus or hospital.

A significant aspect of a successful reuse plan is the identification of an area's assets and an outline of strategies to build upon them. Other key actions include fostering and improving the basics of quality urban living: safety, good schools, parks and adequate public facilities.

Encouraging reuse in your community

Once an area is identified as appropriate for a focused reuse strategy, several public actions can help stimulate private investment. Some of the key actions that will promote both reuse and increased pedestrian access follow:

Mixed uses such as these condominiums above retail create an appealing village character.

Allow retail and office uses to mix with residential uses

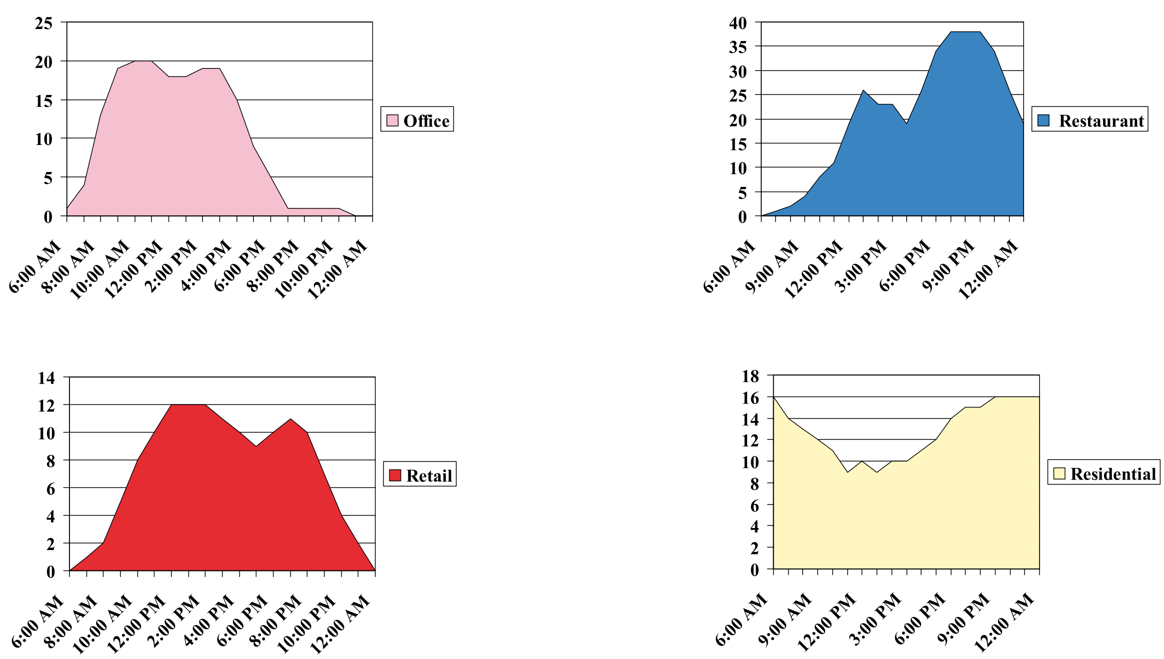
Mixing uses creates an appealing urban or village character. When designed to meet the street, ground-floor retail is especially useful in creating a vibrant pedestrian-oriented experience. Street-level retail also tends to encourage development of more housing. The additional income generated from the retail uses helps make more reuse feasible, including the reuse of housing on upper floors. When there is not enough market demand for large amounts of street retail, live-work units – residences with a small ground-floor, street-facing room for a home office or small business – can provide much the same function as ground-level retail.

A worker in a mixed-use environment may walk to a number of nearby restaurants at lunchtime, pick up a birthday gift for that evening, and walk home to her townhouse up the block. All of these activities are done without fighting traffic.

Invest in shared parking

High off-street parking requirements consume large amounts of land and, by doing so, tend to inhibit reuse. The solution is not to ignore parking demand, but to move parking supply from inefficient and piecemeal private parking lots to efficiently-used and space saving district-wide shared parking lots or structures. Shared parking can be simply

Each land use has its own unique parking demand curve.



STANDARD PARKING

Standard suburban parking regulations require each user to, at a minimum, meet peak parking demand and often more.

Typcial suburban commercial developments provide parking to meet the peak demand of the 5th busiest day of the year – 15 to 20% more than is needed at the peak time of an average day.

Zoning regulations also generally require more supply than necessary to meet average peak demand.

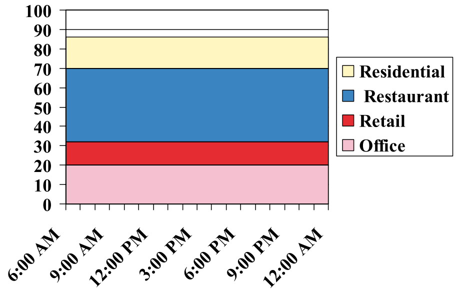
In the example below, 1800 parking spaces are needed based on average peak demand if parking is not shared between any adjacent land use, like a water well system.

Typical supply would be approximately 2100 spaces.

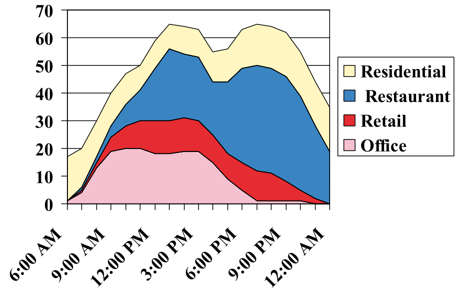
SHARED PARKING

In a walkable town setting, parking can be used as a shared utility, like a municipal water service, resulting in much more efficient use.

- **A main street district where parking is shared would require only 1500 parking spaces.**
- **For shared parking to be successful, there must be a mixture of uses – to stagger peak parking demand, and walkable streets – so pedestrians will be willing to walk from one land use to the next.**



No Sharing: Every use must provide parking for their individual peak demand.



Sharing: Parking supply must meet the total peak of all adjacent land uses.

explained. Each land use has its peak parking demand at a different time of day. For example, office uses have their peak parking demand in the late morning, restaurants peak in the early evening and movie theatres have their peak demand late in the evening. When parking is not shared between adjacent businesses but instead is provided on each individual site, parking supply must be large enough to accommodate the cumulative peaks of each individual land use or business. At any given time of day, most of the parking is vacant, although the unused parking spots move from one parcel to another. When parking is shared among nearby businesses that represent land uses with different periods of peak parking demand, fewer parking spaces are needed to serve parking demand. Because adjacent land uses peak at different times, balancing each other out, only the blended peak demand must be provided for.

On-street parking is the most efficiently used and one of the cheapest types of parking to provide. It is not proprietary to any one business, has high visibility, is seldom left vacant and is available for any business within walking distance. The available on-street supply in a district often can be increased by striping individual parking spaces or through alternative configurations such as such as diagonal on-street parking.

Provide capital infrastructure investments

Capital investments to beef up existing infrastructure, in addition to shared parking, can spark reuse. Potential capital investments include:

■ ***Streetscape improvements.*** Streetscape improvements can leverage private investment by quickly establishing a new district identity. Streetscape furniture, trees and paving material demonstrate to the private sector a public commitment to the district.

Public parking is the most efficiently shared supply; it can help revitalize a business district and ignite a pedestrian-friendly streetscape.

When siting a public parking facility consider the following:

■ Include retail on the ground floor of the public parking structure.

■ Don't build a large public facility in the center of town where it will detract from walkable design. Place it within walking distance of the center. The connections from the public parking to the center are an opportunity to draw pedestrians along a new or revitalized main street.

■ Don't overbuild public parking. Public parking, like all parking, is costly to provide. It is not a magic bullet that, by itself will revitalize an area. Public parking should be balanced with other strategies and investments to encourage redevelopment.

Improvements also encourage new construction to address the street. Street-facing architecture and shaded sidewalks are also critical to walkable neighborhoods.

■ ***Information infrastructure such as fiber optic cables.*** These improvements help attract business firms and residents that are dependent on high-speed internet connectivity.

■ ***Transit and road improvements to improve accessibility.***

■ ***If necessary, basic infrastructure upgrade and repair*** (streets and utilities).

■ ***Environmental (brownfield) restoration.*** Prime reuse or infill opportunities are often held back by real or potential environmental contamination. The federal legal framework regarding contaminated sites discourages the transfer of property because the buyer may be held liable for the entire cost of cleanup. If financially feasible, a community may clean or certify that a site is within an acceptable level of soil contamination.

Create financing and funding mechanisms

Think creatively when devising ways to provide monetary incentives for those interested in reuse and infill. A range of funding mechanisms could include:

■ ***Reduce planning fees.*** Offer reduced fees or waive them for eligible projects in targeted reuse or walkable areas. For example, in Orlando, Florida, transportation fees are reduced or even waived for projects that have local destinations that can be reached on foot and that are built at densities that support transit. This fee waiver is based on the realization that walkable and transit-oriented development reduces the demand for expensive highway improvements.

Reuse of historic buildings in Salt Lake City. Retail on the left, residential on the right.

▶ **In the San Francisco Bay Area, households in neighborhoods with regional rapid transit and walkable connections spent roughly half as much on transportation as households with similar demographic characteristics but in more auto-dependent locations.**

■ ***Prioritize public funding.*** When there is competition for limited public funding, priority should be given to projects in targeted reuse or pedestrian-scale projects. When projects compete for public funding, they should be reviewed to gauge whether they are compatible with the desired scale and quality of development and the services planned for the area. The review also could gauge whether a project implements a planned element of regional or local transportation plans, whether it may require acceptable modification to such plans, or whether it is fundamentally at odds with regional or local transportation planning.

■ ***Guarantee funding for "risky" projects.*** Jurisdictions can help obtain funding or guarantee/underwrite financing for developments so that risk-averse financial institutions will be more willing to lend funds to projects such as mixed-use developments and live/work housing.

■ ***Provide funding to improve existing areas.***

■ ***Encourage people and businesses to locate in central areas.*** Examples include jurisdictions that offer down payment assistance to people buying houses and condominiums in central communities. Down payment assistance helps make housing and business costs more affordable and more competitive with outlying areas.

■ ***Location-efficient mortgages.*** A "location-efficient mortgage" is an innovative financing concept that rewards people for living in areas of high transit accessibility, areas that typically coincide with reuse opportunity. The concept is gaining ground throughout the country. For example, in Chicago, banks are required to consider the likely reduction in auto-related expenses when households in transit-served neighborhoods apply for home mortgages. The theory is that households in transit-oriented neighborhoods save money on transportation because they tend to have fewer cars and drive fewer miles. The money saved on transportation should be considered in determining how much income a household

An example of infill townhouses in a modern architectural style.

has available for a home mortgage. Jurisdictions in Utah could work with banks and state regulators to encourage these types of mortgages.

Direct participation in reuse and infill

The role of government in a reuse area is to provide the leadership necessary to create positive momentum necessary to stimulate private development. Often the tools described previously are enough to invite private investment. Sometimes more direct strategies are necessary. One strategy involves public partnerships with the private sector; another involves the use of the legal authority available to a local redevelopment agency which includes tax-increment financing and eminent domain.

Public-private partnerships and redevelopment agencies

A public-private partnership is a useful tool to encourage reuse and infill. Though some Utah local governments are cautious about a partnership with the private sector, often some public participation is necessary in the early stages of a reuse plan. One of the best justifications for a public-private partnership is to create a pilot project to demonstrate the market potential in an area. A highly successful first development accomplished through a private-public partnership can help ignite otherwise weak market demand and reduce the development risks for the private investment to follow. A strong success in a modest-scaled development tends to improve market perceptions much more than a modest success in a large-scale development.

Redevelopment agencies

An effective but controversial way to partner the two sectors is through a redevelopment agency (RDA). An important tool available to a local government RDA to finance reuse efforts is tax-increment financing. Tax-increment financing makes available for up to 25 years any property

FLAG LOTS

Often, large parcels of land in otherwise developed areas are left vacant because they lack street access. Flag lots can be an appropriate solution to this problem if they follow some of the following guidelines:

- A flag drive serving two or more lots should be shared to minimize curb-cuts and visual impacts on adjacent lots. Shared drives should be only slightly more wide than single-lot drives. For example 12' for one lot and 15' for two or more lots.
- There should be no parking 10 feet on either side of the flag drive entrance. The flag drive should be screened from view from adjacent lots with hedges or a fence. Snow removal space should also be included to the side of the flag drive.
- Careful attention should be given to separation and screening between the front-yard of flag lots and the backyard of adjacent lots to ensure privacy.

tax revenue generated above the "base year tax roll" – the property tax assessment as of the year the specific redevelopment project is officially approved. This increment must be used for improvements within or supporting the designated redevelopment project (except that up to 20 percent of the increment may be used anywhere in the city for affordable housing).

The first step in this process is to establish an RDA for the local jurisdiction. The governing body, such as the city council, becomes the governing board for the redevelopment agency. The available powers of the agency are established by the "Utah Neighborhood Development Act" (*17A-2-1200 et.seq.U.C.A*). The Act provides for a choice of an economic development or a redevelopment project. If an RDA chooses a redevelopment project, the designated area must qualify as "blighted." This authorizes the RDA to purchase properties through eminent domain (available during the first five years an area is a designated redevelopment district), provides the ability to relocate residential or commercial occupants and includes the use of tax-increment financing. After an RDA forms, it may adopt a redevelopment plan for a specific area. A committee of seven members representing the city, the county, the local school district and the state school board must approve the project area and proposed budget.

Redevelopment agencies in Utah generally have produced positive results. However, the tools available to an RDA have been questioned and challenged. Despite potential controversy, these agency powers can be very valuable in shaping viable and attractive neighborhoods. Following is a review of some tools that can be used effectively by a redevelopment agency:

PROGRAMS FOR HISTORICAL PROPERTIES

Several federal, state and local programs are available to assist in the rehabilitation of older, historically significant properties.

In addition to the programs listed below, there are several municipalities throughout the state that offer low-interest loan and grants programs for the rehabilitation of buildings.

■ **Federal Commercial Rehabilitation Tax Credit.** A 20% investment tax credit (ITC) is available for the rehabilitation of historic buildings that are listed on the National Register of Historic Places.

■ **Utah State Residential Rehabilitation Tax Credit.** A 20% non-refundable state income tax credit is available for the rehabilitation of historic buildings (National Register) that are used as owner-occupied residence or residential rentals.

■ **The Utah State Historic Preservation Office** offers grants for rehabilitating old buildings. Grants for communities are available for many preservation related activities including "brick-and-mortar" rehab work. Additional grants are earmarked for older commercial buildings as part of "Main Street" revitalization efforts.

For more information contact the Utah State Historical Society, State Historic Preservation Office at (801) 533-3533.

■ ***Eminent domain and selective demolition*** can be used to assemble land into cleared parcels large enough to be attractive to the private sector. Large pieces of land are easier to develop since they offer more flexibility with site design and development programming. Typically, it is prohibitively expensive for the private sector to assemble land because of absentee ownerships or property hold-outs.

■ ***Relocation of residents*** should be used with extreme caution. There should always be a net increase in housing units and the total number of affordable housing units should be at least maintained. If dilapidated housing must be replaced, new units should be developed nearby to help relocated residents maintain their social network. In many cases, older housing units provide the character upon which a district identity can be built. Recognizing this, many cities choose to fund programs to renovate and rehabilitate older housing units rather than raze them.

■ ***Tax increment financing.*** Anticipated future tax increment funds often are leveraged to bond for funds that can be used soon after a reuse district is established. Bonding enables a city to establish positive momentum in a district by making significant up-front improvements.

Reuse and housing

One of the lingering failures of modern redevelopment was the urban renewal plans of the 1950s and 1960s. Many of these were attempts to tear down "slums" that were actually struggling but viable working-class neighborhoods. This form of reuse destroyed these neighborhoods and scattered residents to locations where they were without social ties. Much of the reuse from this era replaced small-scale, pedestrian-friendly architecture with large-scale, automobile-oriented development.

The Artspace adaptive reuse project in Salt Lake City helped turn around west downtown.

Most reuse projects, especially those that seek to provide a pedestrian-friendly and pleasant urban experience, benefit from mixed-income housing. One of the most challenging problems to solve in a modern urban setting is a pocket of poverty. When an entire area suffers from poverty and high unemployment, other social ills soon follow. Many successful reuse areas avoid creating a concentration of low-income housing by subsidizing roughly one-third of housing units.

Mixing housing units that serve a variety of market segments has a number of other advantages. There is sufficient disposable income to support a variety of retail and restaurant uses; there is no stigma associated with living in the area; and all residents, including those of lower incomes, benefit from the stability and opportunity that a vibrant community affords. Many profitable developments start with luxury housing and, after the district's housing market is proven, follow with moderate income housing. Affordable housing should not be excluded or forgotten in a reuse area. Many reuse areas are well served by transit, services and employment opportunities that are convenient for working and lower-income singles and families.

Summary

Much of our history has been in settling and taming the often-harsh Utah landscape. Today, the prime concern of many Utahns is to preserve the quality of life that we have built here. As we begin the 21st century, our cities and towns will turn increasingly to managing and focusing growth into desirable and environmentally less damaging areas. Reuse and infill should be tools that every community investigates using for areas more than 30 to 40 years old. Properly planned and administered, they can bring tremendous benefits to a community. In addition to being a cost-effective and environmentally sound way to accommodate growth, they can foster living and working environments that are almost impossible to create on vacant land. Redeveloped areas can combine historical development with new buildings, mix walking and bicycling with automobile use, and build unique identities centered around the intrinsic qualities of an area. While the amount of reuse in Utah has never been measured, some western cities accommodate as much as 30 percent of their new housing growth through reuse and infill strategies. They are valuable tools that Envision Utah believes will be used to improve our quality of life.