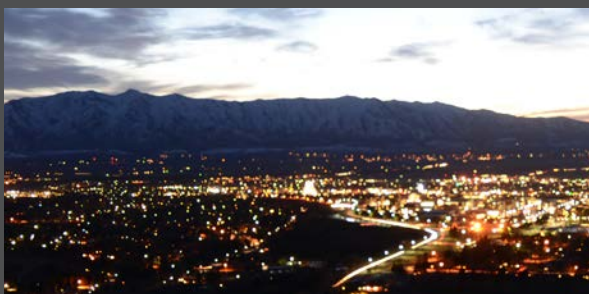


SMART GROWTH FOR CACHE VALLEY



Our population will grow to around 240,000
people by 2040.

Are you ready for the change?

2014 Edition

Daniel Y. Macfarlane & Jacob A. Young

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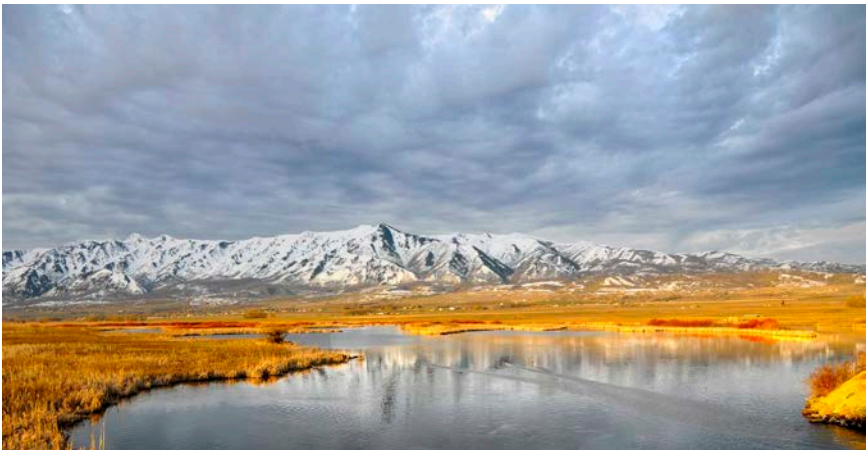
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INTRODUCTION

Cache Valley is an incredible place to visit, gain education, do business, and especially to live. The views of the Wellsville Mountains to the west and Mount Logan to the east are majestic. The mountains and valley provide a comfortable feel and haven like atmosphere. A large portion of the Valley is agricultural with working farms, which reminds us of our heritage to the land. Many streams and rivers wind through the valley creating important ecosystems for wildlife. The access to the surrounding mountains and recreation is unparalleled, with Logan Canyon, Blacksmith Fork Canyon, the Wellsville Mountains, and many other opportunities. The Bear River Mountain Range is a great place to escape from the city and retreat to the mountains for recreation, wildlife viewing, fishing, hunting, and relaxing. Cache Valley is far enough away from Salt Lake City to feel separate from the “big city”, yet close enough to catch a plane flight within a couple hours.

Figure 1: Cache Valley



Source: Rodger Pickett

Logan City is the hub of Cache Valley with a population of 48,879 people in 2012 (US Census Bureau) and home to Utah State University. In 1888, Agricultural College of Utah was founded and has since become the world-renowned Utah State University (USU). In 2010, Forbes magazine ranked USU #15 in “best buys” in regards to tuition cost and quality of education. Utah State University brings world-class opportunities to Cache Valley in education, research, jobs, and other areas. USU and Cache Valley enjoy a reciprocal relationship by providing these opportunities and improving the

quality of people's lives. USU has grown from a handful of graduates in 1894 to more than 17,000 students at the USU Logan Campus (27,000+ University wide).

As we look forward to and prepare for the future it is important to remember the past.

“The first settlement was established in 1856 in the south end of the valley at Wellsville. Physical remains of pioneer days can still be seen in many Cache Valley town sites that reflect the Mormon settlement pattern” (Cache Valley Visitors Bureau, 2012).

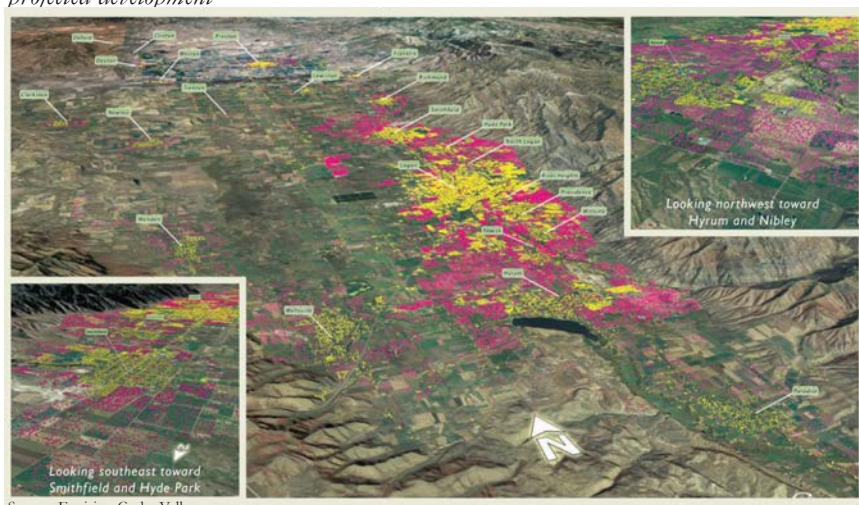
The same “Mormon settlement pattern” provided a framework for growth in many areas of Cache Valley. However, other parts of Cache Valley have not followed this pattern to their detriment. Continuing in the pioneer's footsteps, Envision Cache Valley and other planning efforts in recent years have been looking to and preparing for the future.

If Cache Valley continues on with a “business as usual” approach and doesn't alter its current development patterns, future generations may be faced with the following consequences:

- **Significant loss of farm and agricultural land.** Cache County loses approximately 600 acres of farmland a year with a total loss of 22% between 1986 and 2002 (Sands).
- **Cities will continue to grow from border to border** with no separation between cities (i.e. Logan and North Logan).
- **Traffic congestion and travel time will dramatically increase** not only because of an increase in drivers, but also because more cars will be heading to the same destinations on the same transportation network we have today.
- **Air quality will diminish and pollution will increase** as the number of vehicles and travel times increase. Other air quality contributors include: regional coal plants, industry, and agriculture.
- **Community health will decrease** as harmful health factors increase. These often include: poor air quality, increase in obesity (from lack of physical activity due to automobile dependency and poorly connected neighborhoods), poor nutrition, and others.
- **Economic strain will increase due to poor infrastructure** and single use land planning and management.

- **Water quality will decrease in sensitive wetlands** and riparian areas from managing storm water using conventional methods.
- **Water availability will decrease** if the same water consumption rates and practices continue as the population increases. It is more cost effective to conserve water than to build new dams.

Figure 2: Projected 2040 Development in Cache Valley - Pink areas represent projected development



Source: Envision Cache Valley

Figure 3: Cache Valley Population Growth

Year	Population
1950	43,403
1960	44,255
1970	49,704
1980	66,071
1990	79,415
2000	102,720
2010	125,442
2040 (projected)	239,816

(Population figures include Cache County and Franklin County)

We do not need a crystal ball to see the future of Cache Valley. We only need to look down the road we are on and see the direction we are heading. The growth history of Weber, Davis, Salt Lake, and Utah counties teach us many lessons about the results of our current development patterns and policies.

CREATED BY:

Mr. Danny Macfarlane was a contributing editor to this guide. Danny is a native of Cache Valley and is a licensed Civil Engineer in the State of Utah. Danny graduated from Utah State University with a Master's Degree in Civil and Environmental Engineering with an emphasis in Hydraulics. Danny has professionally worked on many projects in Cache Valley. Danny's work endeavors to incorporate cutting-edge concepts, develop future planning visions, and engineer projects that are truly sustainable while enhancing the lifestyle of the community. Sustainability is not just a buzz-word, but an opportunity to enhance the quality of our lives.



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Mr. Jacob Young is a main contributor of Smart Growth for Cache Valley. Jake is passionate about planning healthy communities and creating beautiful sites and landscapes. He is a member of American Planning Association (APA) and American Society of Landscape Architects (ASLA). Jake is a native of Cache Valley and a USU graduate. He is a licensed Landscape Architect in the State of Utah. Jake received his Master's Degree in Landscape Architecture from Kansas State University. Jake's experience includes: city planning, form-based codes, land-use planning, resort design and planning, community planning and design, park design, storm-water planning and design, landscape and irrigation design, construction management, and more.



ACKNOWLEDGEMENTS

Smart Growth and Envision Cache Valley principles, as outlined in this guide, were created by Envision Utah in conjunction with the Envision Cache Valley Executive and Steering Committees, and with citizen participation. All dark blue, italicized text is from the Envision Cache Valley (ECV) document. All other references are annotated in appropriate locations of this guide and are listed in the reference section at the end of this document.

As editors we would like to acknowledge the input of:

Marty Cannon, ASID

John Bailey, MD & NLC City Council

Jack Draxler, Utah House Rep

Mayor Simmons, Smithfield

Bob Fotheringham, Water Manager Cache Valley

Jay Baker, former Cache County Planner

PURPOSE

Keep the City, City and the Country, Country.

Civil Solutions Group has created this guide to help citizens, planners, engineers, leaders, politicians, builders, developers, and all other groups **raise the bar on community growth through simple solutions** that implement Smart Growth and Envision Cache Valley principles. This document provides planning tools that can be used to help guide predicted growth in a smart direction, while maintaining Cache Valley's unique quality of life.

According to the 2011 United States Census Bureau, the combined population of Cache County, UT and Franklin County, ID was 127,549. Envision Cache Valley projects the population will double by 2040 (ECV, 2009). **Unless significant changes are made to current development practices, Cache Valley will become a landscape dominated by suburban sprawl with little evidence of agricultural lands, open space, and quality downtowns.** Current land-use practices result in poor air quality, traffic congestion, unfriendly pedestrian corridors, deteriorating downtown centers, loss of agricultural land, unnecessary infrastructure, and other detrimental effects.

The current growth patterns and the desire to protect open space are on separate paths with unwanted consequences. This guide embraces the Envision Cache Valley Vision Principles and illustrates the **mutual relationship between urbanism and rural open space preservation**. The coexistence of growth and conservation can be achieved using Smart Growth planning tools and methods as illustrated in this document.

Smart growth comes from the knowledge and ability of communities to plan for the future and implement procedures that will guide growth in a specific direction. Cache Valley is one of the most beautiful places in America. That beauty can be preserved for future generations by following the principles of Smart Growth and Envision Cache Valley.

Smart Growth is defined here by the following principles:

1. **Implement mixed land uses.**
2. **Utilize compact building design.**
3. **Create a range of housing opportunities and choices.**
4. **Create walkable neighborhoods.**
5. **Foster distinctive, attractive communities with a strong sense of place.**
6. **Preserve open space, farmland, natural beauty, and critical environmental areas.**
7. **Strengthen and direct development towards existing communities.**
8. **Provide a variety of transportation choices.**
9. **Make development decisions predictable, fair, and cost effective.**
10. **Encourage community and stakeholder collaboration in development decisions** (EPA, About Smart Growth, 2009).

Resources:

- Idaho Smart Growth. http://idahosmartgrowth.org/images/uploads/files/final_smart_growth_guide_11-28-11_25pg_for_web_lo-res.pdf
- Smart Growth Online. <http://smartgrowth.org/>
- Envision Utah. <http://envisionutah.org/>

GENERAL GROWTH PATTERNS

1. Enhance and maintain the individual community identity of existing towns and cities by encouraging inward growth, more compact development, and by buffering community boundaries with agrarian and natural lands.

a. Use incentives to encourage infill and redevelopment within towns and cities.

- Preserve and protect the unique heritage and character of individual communities, while accommodating infill and growth.
- Strengthen existing downtown areas in each town, fostering a sense of community identity.
- Plan development to be compatible with historic landscapes and architecture.

b. Use planning tools to preserve vistas, transportation corridors, and land uses that define the most desirable characteristics of Cache Valley.

2. Encourage the continued viability of working farms and ranches and the integrity of natural systems and views.



VIDEO CLIP
"SLC CNU 21"



VIDEO CLIP
"Suburban Sprawl"



Figure 4: North Logan City Center.



Source: CSG

General Growth Patterns Toolbox

• **Establishing Centers:** During early Utah pioneer planning each community had a center such as a main street or downtown. Some characteristics of early pioneer town centers included: commercial buildings within walking distance, residential housing within the center,

and community events held in the centers. Generally speaking, for the past 60 years, Cache Valley has not followed this pattern. It has trended towards conventional patterns of sprawl, including cul-de-sacs, large single-use shopping centers, and spread out infrastructure. This document and other recent planning sources recommend that Cache Valley return to its historic roots by focusing concentrating growth in city centers and other key locations throughout the valley. There are various types of centers such as regional centers, city centers, town centers, neighborhood centers, and recreation centers. The different center types share common characteristics such as: higher intensity of uses, a mixture of residential and commercial uses, greater walkability, multi-modal transportation, and public gathering places.

Resources:

- Implementing Centers. <http://envisionutah.org/wasatch-choice-toolbox/tool-implementing-centers>
- Putting Smart Growth to Work in Rural Communities. http://icma.org/en/icma/knowledge_network/documents/kn/Document/301483/Putting_Smart_Growth_to_Work_in_Rural_Communities
- Building Zion. <http://byustudies.byu.edu/PDFLibrary/44.1GalliBuilding-3f800610-43e7-467e-b626-3beb03472d25.pdf>
- American Farmland Trust. Fact Sheet: Transfer of Development Rights (TDR). 2001. www.farmlandinfo.org/documents/27746/FS_TDR_1-01.pdf
- Protecting Cache Valley's Working Farms and Ranches. <http://extension.usu.edu/cache/files/uploads/Chris%20Sands%20PowerPoint.pdf>
- Agricultural Land Preservation Tool Box. <http://www.brag.utah.gov/pdf/Ag/AgriculturalLandPreservationToolBox.pdf>

Traditional Neighborhood Design: TND

Traditional Neighborhood Design or Traditional Neighborhood Development (TND) was the staple planning method for laying out communities in the USA and Utah for much of the late 1800's and through the 1950's. TND's are typically represented by smaller and narrower lots. The homes are generally single family, with an occasional two family or mansion home apartment. TND neighborhoods are characterized by front porches, detached garages or set back garages, front yards, connected street grid, and sometimes alleyways. TND's are walkable, affordable and should be used as the bread and butter for residential planning in Cache Valley. Examples of TND's can be found in the John Adam's neighborhood of Brigham City, Utah. Common architecture styles of TND's include

Figure 5: Example of TND near John Adam's Park Brigham City, UT



Source: CSG

Figure 5.1: Main Street in Logan, UT



Source: CSG

bungalow, craftsman, and cottage. TND neighborhoods are well connected with schools, shops, businesses, and bus systems. TND's blend well with Downtowns, Town Centers, Mixed-use areas, larger residential, and others development types. Most current residential ordinances in Cache Valley communities prohibit this long-term solution and it is recommended that cities re-consider their ordinances.

Resources

- Planning implementation tools: Traditional Neighborhood Design. <ftp://ftp.wi.gov/DOA/public/comprehensiveplans/ImplementationToolkit/Documents/TND.pdf>
- State of Florida Traditional Neighborhood development handbook. www.dot.state.fl.us/rddesign/FloridaGreenbook/TND-Handbook.pdf

Pioneer Planning Tool

Utah has a rich history of pioneer planning methods and is known worldwide for its historic approach to planning. Many of the early Utah communities were planned based on the template of the Plat of Zion. The Plat of Zion template was a grid community intentionally designed to have a density of 15-20 citizens per acre. The Plat of Zion evolved into a variety of different forms in many early Utah communities. Disappointedly, these planning methods have been replaced by conventional suburban sprawl. The visionary pioneer planning methods from mid 1800's through early 1900's included the following:

- **Regional Planning.** Early pioneers quickly learned about the resources of the region and established a network of communities through the mountain west to capture and allocate these natural resources. Communities specialized in mining, farming of specific crops, transportation, manufacturing, and other trades. Communities worked towards the benefit of the region.
- **Street Grid System.** The pioneer's distinctive grid system has proven to be successful over hundreds of years going back to New England towns. The grid system is modular and can be expanded. The grid system allows for flexibility in development and promotes walking, biking, and less car travel (less pollution). These methods have been forsaken for non-pioneer planning approaches such as cul-de-sacs, gated communities, and flag lots. Older communities should look at their deep roots for successful and visionary planning methods.
- **Standards.** Pioneers established standards the year they moved into the Salt Lake Valley, such as building setbacks of 25 feet.
- **Common Open Space and Resources.** Early pioneers had large grazing lots to share livestock and agriculture. Water resources were commonly shared among farmers.

Resources:

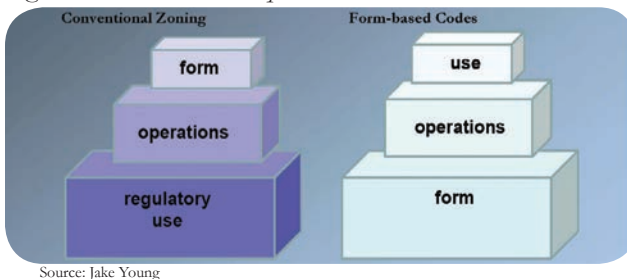
- Building Zion: LDS Urban Planning. <https://ojs.lib.byu.edu/spc/index.php/BYUStudies/article/view/6990/6639>
- Explanation of the Plat of Zion. <http://urbanplanning.library.cornell.edu/DOCS/smith.htm>
- Mapping Salt Lake City: The Grid. <http://www.mappingslc.org/essay/item/41-the-grid>

Conservation Development or Cluster: Conservation subdivisions are defined by open space preservation and clustered lots. The idea behind a conservation subdivision is to cluster and increase the density of households while preserving adjacent open space and agricultural lands. Density bonuses should be provided to incentivize the clustering of lots within a proposed subdivision. Owners give up large lots in exchange for an increase of open space.

Many of the benefits of conservation subdivisions include reduced necessary city infrastructure, increased open space, lower maintenance for smaller lots, water conservation, and agricultural preservation.

• **Form-Based Code:** Contemporary zoning practices (often labeled Euclidian zoning) segregate development by land use. Neighborhoods are segregated by economic levels and housing type. While separation is essential for some land-uses (airports, landfills, etc.), **segregation should be the exception, not the rule.** A form-based code regulates the physical form of the community and its buildings, not their uses. Form-based codes focus on building location, streetscape dimensions, and quality of traditional walkable neighborhoods. Specific design elements typically regulated by form-based codes include, but are not limited to, density, mixed-use, public frontage, thoroughfare form, civic spaces and buildings,

Figure 6: Form-based code priorities

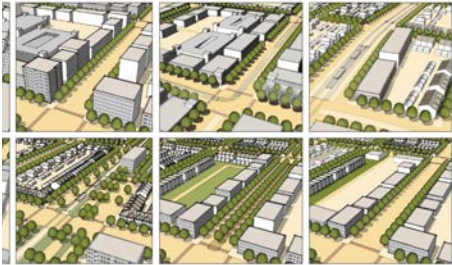


VIDEO CLIP
"Form-Based Code"

building setbacks, garage setbacks, housing types, and pedestrian/bicycle usages. Form-based codes focus on people-friendly environments and durable buildings, yet provide market flexibility and varied usage. While smart codes may promote higher density the emphasis is on **quality, not quantity, of housing.**

Figure 6.1: Form-based Code

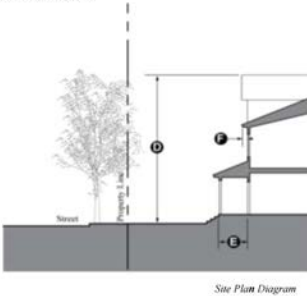
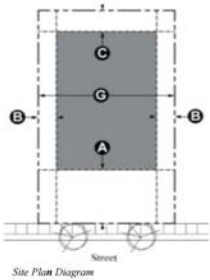
**Template Form-Based Code
for Centers & Corridors along the Wasatch Front**
A Wasatch Choice for 2040 tool to achieve your community vision



Source: Wasatch Choice for 2040

Figure 7: Form-based Code Example

§17.15.110 Resource Conservation (RC) Development Standards



Residential Density	
Units/Acre (min-max)	.025 (1unit/40 ac.
*bonuses not allowed	
Site	
Lot Size (min.-max)	10K-20K sq.ft.
Ⓐ Lot Width (average/block)	80'
Lot Coverage (max bldg. footprint)	40%
*Lot width average does not apply to cluster homes on individual lots.	
Setbacks	
Ⓐ Front (min)	35'
CS (T.B.D. with Certificate of Appropriateness)	
Ⓑ Side – Primary (min)	8'
Side – Accessory (min)	5'
Structures less than 120 ft²	1'
Ⓒ Rear (min)	10'
Structures less than 120 ft²	1'
Parking	
Garage Setback	
From front plane of Primary Structure	10'
(except side-entry garage)	
Detached garage distance from rear or side of primary structure	6'
Side/Rear Setbacks (accessory structure)	5'
Required Stalls	2.0 / Unit
Driveway Width	20'

(max width within 75' of street R/O10')

Source: Logan City Land Development Code

Land Set Asides (17.35.020)	
Open Space (17.35)	90 %
Useable Outdoor Space (17.35)	10%
*no substitutions for open space	
Building Form	
Height	
Ⓐ Primary Building (Max)	35'
Accessory Building (Max)	25'
Fences & Walls	
Within Front Setback (max)	4'
Side/Rear Setbacks	6'
Ⓑ Front Stoop/Porch (min-max depth)	4-10'
Roofs	
Roof Type	
Sloped Roof Pitch (min)	Sloped 5:12
Ⓐ Roof Overhang (min)	1'
Windows	
Window trim, including sills, shutters and/or surround (min)	NA
Accessory Building	
Cannot exceed 70% of primary bldg. footprint area.	
When facing street, width cannot exceed 50% of the front façade width of the primary structure.	

Resources:

- Local Government Commission. Creating Great Neighborhoods: Density in Your Community. 2003. www.smartgrowth.org. Describes how well-designed, compact development can provide increased housing and transportation options, greater economic development, and a chance to preserve land for recreation and open space.
- EPA, Smart Growth Guidelines for Sustainable Design and Development. 2009. http://www.crcog.org/publications/CommDevDocs/Sustainable%20Communities/EPA_SG_Guidelines_Finalsm.pdf
- SmartCode freeware found at www.smartcodecentral.org
- EPA, Essential Smart Growth Fixes for Urban and Suburban Zoning Codes. 2009. http://www.epa.gov/dced/pdf/2009_essential_fixes.pdf
- Essential Smart Growth Fixes for Rural Planning, Zoning, and Development Codes. http://www.epa.gov/dced/pdf/rural_essential_fixes_508_030612.pdf
- Wasatch 2040 Form-Based Code
- <http://envisionutah.org/wasatch-choice-toolbox/tool-form-based-code>

Creating such a code can help discourage urban sprawl and foster healthier communities. Many municipalities have inadvertently made smart growth illegal by adhering to existing and outdated codes. Many communities in Utah have already adopted various types of Form-Based Codes, including Logan City and North Logan City.

• **Incentivize Smart Growth:** The form which smart growth takes is unique for each community, but the proper planning principles are the same and serve to discourage suburban sprawl. Smart Codes or form-based codes can be adopted by municipalities to guide development in the right direction. Municipalities should identify projects that adhere to a Smart Code and provide either financial help and/or tax relief. Municipalities that cannot provide financial incentives can still offer a streamlined approval process. **Reduced approval time lines and processes can be equally beneficial to developments as tax breaks and financial assistance.**

Resources:

- The City of Chandler Arizona, In fill Development Plan, 2009. <http://www.chandleraz.gov/Content/ChandlerInfillIncentivePlan.pdf>
- Los Angeles County, In fill Development Policy, 2008. http://planning.lacounty.gov/assets/upl/apps/infill-development_info_20090113.pdf

Figure 8: Beautiful Cache Valley



Source: Jake Young

• **Legalize Smart Growth:** Unfortunately, suburban sprawl has become the default development pattern. In most communities smart growth is technically illegal. Despite the stated policies of so many official reports and comprehensive plans, most existing codes and standards effectively outlaw the construction of compact, diverse, walkable, and connected communities. A politically realistic approach to make necessary changes would focus less on outlawing sprawl and more on **removing the impediments that make smart growth impossible** (Duany, 2010). A study titled “Legalizing Smart Growth” discusses the need to provide a legal parameter for smart growth (Emily Talen, 2003). The following resources provide information on implementing and legalizing smart growth.

Resources:

- Emily Talen, Legalizing Smart Growth, 2003. <http://jpe.sagepub.com/cgi/content/abstract/22/4/345>. This document investigates how existing codes and zoning have made it difficult to embrace smart growth.
- Smart Growth Shareware: A Library of Smart Growth Resources. Smart Growth America, 2006. www.smartgrowthamerica.org. Includes hundreds of smart growth resources.

HEALTHY COMMUNITIES

According to the Center for Disease Control and Prevention in Utah, “56.9% of adults were overweight, with a Body Mass Index of 25 or greater.

22.5% of adults were obese, with a Body Mass Index of 30 or greater” (CDC).

Health effects of obesity include: high blood pressure, diabetes, heart disease, joint problems, cancer, and others (Stanford, 2012).

Designing and planning healthy communities can help reduce obesity.

Essentially there are two components to a healthy community the software and the hardware. The software includes medical professionals, hospitals, health organizations, and nutrition. The hardware of a healthy community is the built environment such as streets, walks, buildings, and parks.

Fact: “People are 38 percent more likely to exercise when they live within one mile of a park” (Jackson, 107).

Figure 9: Neighborhood Trail, South Jordan, UT



Source: Jake Young



VIDEO CLIP
“Healthy Communities”



VIDEO CLIP
“Designing Healthy
Communities”



Healthy Communities help people be more active through providing sidewalks, trails, bike lanes, parks, and well connected streets. Proper nutrition is essential and can be provided by community gardens, farmers markets, home gardens, and grocery stores. Transportation like CVID can provide options to people of all ages and abilities. Communities can be made safer through more street lighting, well marked crosswalks, bike lanes, and reducing vehicular speeds on residential streets. Neighborhoods can serve the needs of a greater number of their residents by providing housing types and opportunities for all ages and incomes.

Recent research shows that poor air quality can cause “increased incidences of heart disease” resulting in “greater risks of stroke, heart attack, and cognitive degeneration” (O’Donoghue, 2012).

Figure 10: Logan Utah Farmer’s Market



Source: Jake Young

Resources:

- Centers for Disease Control and Prevention, Healthy Communities Program. <http://www.cdc.gov/healthycommunitiesprogram/>
- Designing Healthy Communities. <http://designinghealthycommunities.org/>
- Centers for Disease Control and Prevention , A Sustainability Planning Guide for Healthy Communities. www.cdc.gov/healthycommunitiesprogram/pdf/sustainability_guide.pdf
- Centers for Disease Control and Prevention, Youth Risk Behavior Surveillance System. <http://www.cdc.gov/healthyyouth/yrbs/index.htm>
- Utah Farmers Markets. <http://www.utahsown.utah.gov/farmersmarkets/>

HOUSING AND EMPLOYMENT

1. *Encourage mixed-use neighborhoods and town centers that include a variety of housing options and that allow individuals and families to live close to where they shop, obtain services, go to school, work, and play.*
 - a. *Provide housing options for people of all ages, stages, and incomes.*
 - b. *Increase housing options to better meet market demand; expand market options where growth is envisioned.*
 - c. *Create walkable and bikeable communities by integrating varied residential types and lot sizes as well as schools, shopping, services, and employment.*
 - d. *Encourage infill and redevelopment.*
 - e. *Encourage development patterns that use resources and infrastructure efficiently, reducing capital and maintenance costs as well as impacts on air and water resources.*
 - f. *Encourage local-scale civic amenities like libraries and schools over regional ones.*
 - g. *Encourage local-scale parks and trails in addition to regional parks and trails.*
2. *Develop clean and sustainable industry and good-paying jobs close to home.*
 - a. *Build infrastructure that is efficient and ready for growing businesses.*
 - b. *Prepare under-utilized/ vacant land within existing towns and cities for compatible economic development.*
 - c. *Designate specific areas for economic development and plan adequate infrastructure (transportation, energy, water, broadband, etc.).*
 - d. *Encourage the development of a job center on the west side of the valley, perhaps near the State Route 30/23 junction. (ECV, 2010).*



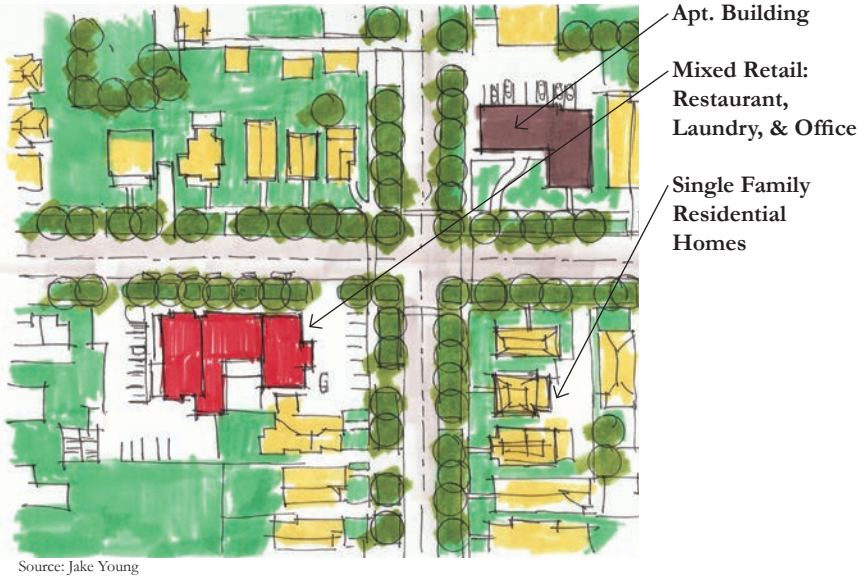
VIDEO CLIP
"Reset and Recovery:
Changing Market"



Housing and Employment Toolbox

• **Mixed-Use:** A mixed-use center incorporates various land-uses such as housing types, businesses, shopping, recreation, and civic spaces. Traditional Euclidian zoning is based on single-use zones such as residential subdivisions, shopping centers, office complexes, and apartment complexes. As a result, land is used, travel times and distances increase, land-uses are segregated, more infrastructure is required, and pollution increases. Mixed-use development can be achieved by incorporating smart growth codes that enable a variety of uses in a single area. Some of the mixed-use benefits

Figure 11: Salt Lake City Avenues Mixed-use Neighborhood



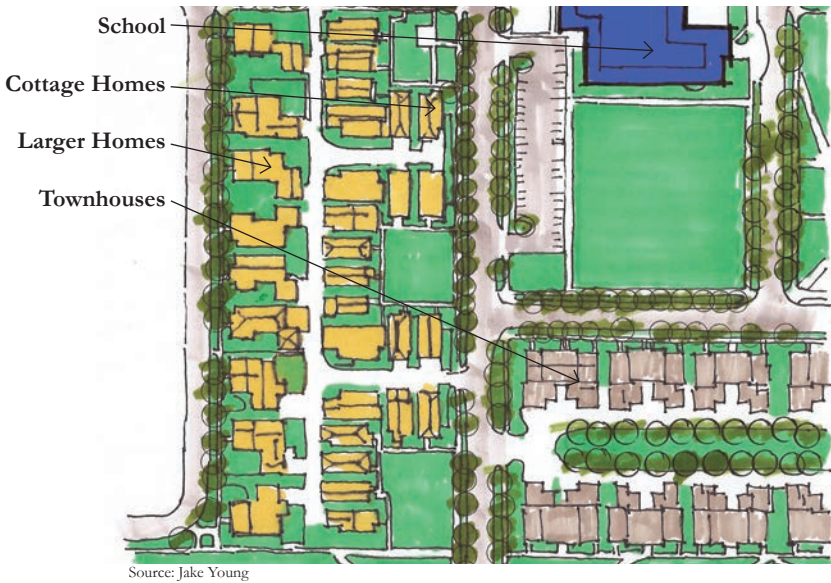
include open space preservation, the creation of diverse neighborhoods, and reduced traffic and pollution. They also serve to promoting walking, biking, mass transit, and living closer to one's daily needs. **Mixed-use neighborhoods and developments come in all different sizes.** Ranging from larger developments, such as Salt Lake City's Sugarhouse neighborhood, or smaller ones, such as Logan City's Island Market.

Figure 12: Salt Lake City Avenues Mixed-use Neighborhood



Recently, Utah Transit Authority took an inventory of the communities along the Wasatch Front that had revised their master plans to include Transit Oriented Development (TOD) or Mixed Use (MU) zones near transit stations.. The data was very intriguing and is summarized as follows for the 79 (72 cities and 7 counties) communities: 58% of the communities have a TOD or MU zone and 71% of the communities have a TOD or MU land use recommendation in their General Plan. The number of TOD and mixed-use ordinances is both surprising and encouraging. It shows that communities are seriously considering alternative growth patterns and the importance of the inter-relationship between transportation and land-use planning. (Utah Planner, July 2012).

Figure 13: Daybreak, South Jordan UT, Mixed-housing Neighborhood



Resources:

- National Association of Home Builders, Smart Growth, Smart Choices Series: Mixed-Use Development. http://www.nahb.com/fileUpload_details.aspx?contentID=39196
- Environmental Protection Agency, Trip Generation Tool. http://www.epa.gov/dced/mxd_tripgeneration.html
- North Logan City, North Logan City Master Plan, 2008. <http://www.ci.north-logan.ut.us/GeneralPlan/Element%20V.pdf>
- Daybreak Development, see: www.daybreakutah.com. An example of an urban mixed use neighborhood in Utah.
- Middleton Hills, see: www.middletonhills.com. An example of a mixed use neighborhood in Wisconsin.
- Congress for the New Urbanism. www.cnu.org. Contains reports, bibliographies, and an image bank of projects.
- Bear River Association of Governments (BRAG) affordable housing guidelines. http://brag.utah.gov/wp-content/uploads/2014/04/Aff-Housing_Design-Best-Practices-FINAL-web.pdf

• **Housing Diversity:** Stronger neighborhoods include a wide range of dwelling types. First, genuine community social networks depend on the presence of a **diversity of ages and incomes**. Second, affordable housing is more successful in helping people when it is **distributed throughout the community**, rather than segregated to a certain part of town. Third, it is more efficient to live in the same neighborhood as one's dentist or school teacher, not to mention one's adult child or elderly parent. Fourth, life-cycle housing allows residents to change housing types without moving out of the neighborhood; one can up-size or down-size without leaving established social networks. Lastly, encouraging a diversity of housing options allows developers to access multiple market segments, thereby building complete neighborhoods faster. During the recent recession many mixed-use and mixed-housing developments continued to grow, while conventional stagnated. **Neighborhoods should include many, if not all, of the following housing options: rental houses or apartments, condominiums, live/work buildings, townhouses, cottages, and large homes** (Duany, 2010). Communities ought always to be working towards creating affordable opportunities for home ownerships. **"Evidence indicates that homeowners are more likely to: a) be satisfied with their homes and neighborhoods; b) participate in voluntary and political activities; and c) stay in their homes longer, contributing to neighborhood stability"** (Rohe, Zandt and McCarthy 2001).

• **Commercial Lofts & Live/Work Buildings:** Commercial lofts are a housing type which mixes commercial ground level space with residential one- to two-story living above the commercial space. This housing is often used in city centers, but could be used in neighborhood centers as well. Lofts are financially advantageous to developers because the footprint of the building is paid for by the commercial tenant, but the livable space above can be developed for just the cost of the construction. Commercial lofts have the advantage that commercial parking areas typically have little use during the evenings and early mornings resulting in ample parking for residents.

Figure 14: Mansion Apartments

• **Mansion Apartments and Townhomes:** Everyone goes through different life stages, thus requiring a variety of housing types. Mansion apartments and townhomes can provide a community with different housing options and still **maintain the quality and style of a community**. Mansion Apartments are apartments that



Source: Jake Young

are designed to look like a single family home, instead of a typical suburban apartment building surrounded by a sea of parking. Typical mansion apartment design places the parking stalls at the rear of the building, thus shielding them from public view.

Figure 15: Townhouse



Source: Jake Young

Townhomes can be designed to be appealing and fit in with the surrounding single family neighborhood. For both apartment houses and townhouses it is important that the quality and style of architecture blend with that of the overall community. This requires implementation of architectural guidelines or a form-based code.

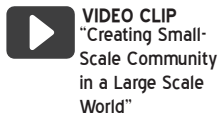
• **Cottage/Bungalow:**

Cottages (including bungalows) are sited on narrow lots, 25-50 feet wide, with a house size of 700 to 1500 square feet. These homes have a distinct front porch, sloped roof, and often a second story living area in the attic. Due to the minimum lot width, vehicles are typically parked in a detached garage located in a rear alley. Cottages are excellent dwellings for small families, singles, retired couples, and students. An architectural guideline or a form-base code should be used to ensure quality and style.

Figure 16: Cottage Home



Source: Jake Young



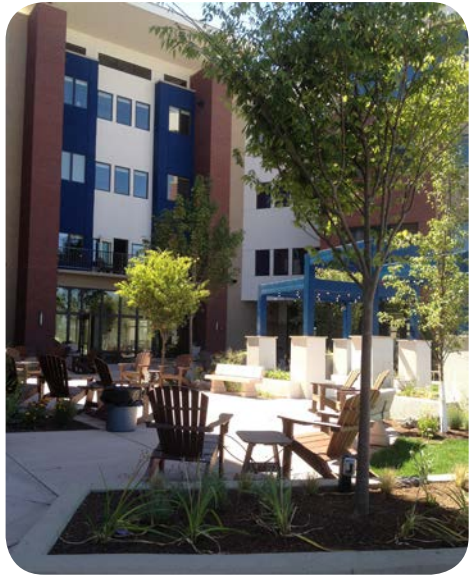
Resources:

- Pocket Neighborhoods: Creating Small Scale Community in a Large Scale World. mediatoolbox.html
- The Not So Big House. <http://www.notsobighouse.com/>

- **Vertical Mixed-use**

Residential: Residents who live in or near a downtown or commercial center spend more money in the commercial center. In turn, residents are provided with the safety of natural surveillance. While residential apartments/condos built over retail have existed in Logan for decades, they have proven a success and are now becoming more common. Cities should plan for and provide ordinances that encourage mixed-use.

Figure 17: Vertical Mixed-Use



Source: Jake Young

- **Rear Alleys and Lanes:**

Alleys and lanes can be a valuable tool in making neighborhoods more pleasant, aesthetically pleasing, and safe. Rear alleys provide a proper place for trash, recycling services, and utilities. By having garages in the rear, homes will be more beautiful and neighborhoods will be more pedestrian-friendly. Rear alleys and lanes allow the house facade to be the home's most prominent feature as seen from the street, instead of the garage.

Figure 18: Rear Alley Example



Source: Jake Young



 **VIDEO CLIP**
"Accessory
Dwelling Units"



 **VIDEO CLIP**
Building a Walkable
Place - Webinar"



 **VIDEO CLIP**
"Backyard Apartments"

• **Accessory Dwelling Unit (ADU):** An “Accessory Dwelling Unit is defined as a secondary dwelling unit established in conjunction with and clearly subordinate to a single family detached unit” (Fairfax, 2010). ADUs are commonly seen as granny flats, carriage houses, coach houses, or basement apartments. Typically, requirements for an ADU include separate entrance, parking, bathroom, and kitchen. ADUs represent a great tool for smart growth. Benefits of Accessory Dwelling Units include increased housing supply (within the existing community footprint), additional income to the unit’s owner, blended affordable housing in existing neighborhoods, and the ability to meet the needs of disabled or elderly. They can also be designed to architecturally fit within an existing neighborhood. Many ADU ordinances require that the primary structure be owner occupied. Cities should adopt an ADU ordinance that is customized for their community. ADUs typically are not counted as part of residential density maximums.

What is YOUR WalkScore?
Find out at www.WalkScore.com



VIDEO CLIP
“Walkable 101”



Resources:

- Accessory Dwelling Units. <http://www.slccouncil.com/agendas/2012Agendas/Jan3/010312A2.pdf>
- Planning fundamentals for public officials and engaged citizens. <http://www.planning.org/pas/quicknotes/pdf/QN19.pdf>
- Accessory Dwelling Units: Case Study. www.huduser.org/portal/publications/adu.pdf
- A Smart Growth Tool for Providing Affordable Housing. <http://www.1000friendsofflorida.org/housing/rossaduarticle.pdf>
- Housing Innovations Program. http://www.psrc.org/assets/6668/hip_adu.pdf

• **Walkable Neighborhoods:** Cache Valley communities must be planned and designed to endure decades. Cities and neighborhoods can offer a lifestyle that promotes healthy living, quality social networks, and awareness for our surroundings. A walkable neighborhood has two basic traits. First, **proximity to life’s basic needs** and second, **pedestrian safety on sidewalks, streets, and city centers**. A simple website and smart phone app to rate the quantitative “walk-ability” is www.walkscore.com. Walkscore will apply a score from one to one hundred. The higher the score the shorter the distance to necessities such as grocery stores, schools, parks, shopping, and transit. Research has shown that people are typically willing to walk 1/4 to 1/2 mile for necessary amenities (Fairfax, 2010).

It is essential that cities have correct standards for sidewalks and crosswalks that service neighborhoods, commercial areas, and schools. Mid-block crossings are a fantastic tool to increase walkability by creating safe walking routes while also shortening distances. Cities should provide equal planning for pedestrians and bicyclists as they do automobiles. Form-based codes are an excellent tool for creating proper walkable standards per zone or transect.

Resources:

- Steps to a Walkable Community.
<http://americawalks.org/walksteps>
- Building a Walkable Place: webinar.
<http://communitybuilders.net/webinars/building-a-walkable-place/>

• **Reuse and Infill**

Development: Cache Valley has a lot of infill development opportunities. Infill is simply undeveloped land or land/buildings in poor condition within an existing city or town. Developing in such locations ensures close proximity to pre-existing infrastructure such as streets and utilities. Examples of infill opportunities include empty lots, inter-block, and re-developing dilapidated properties. Envision Utah says “Land re-use is what keeps cities and towns

Figure 19: Infill Lot Example



Figure 20: Infill Potential in Cache Valley



VIDEO CLIP
“Infill Development
& Walkable
Communities”



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” (Envision Utah, 2002).

Figure 21: Building Reuse and Renovation



Source: Danny MacFarlane

Resources:

- Reuse and Infill. http://envisionutah.org/Urban%20Planning%20Tools%20for%20QG_ch4_1.pdf
- Infill Development: Barriers and Incentives. <http://tmrpa.org/uploads/misc/1045697875-Barriers%20to%20Incentives%20to%20Infill%20-%20version%209%20FINAL.pdf>
- Infill Development: Strategies for Shaping Livable Neighborhoods. <http://www.mrsc.org/publications/infill1.pdf>
- Infill Development Tools. <http://www.psrc.org/growth/hip/alltools/infill>
- what is infill development. <http://www.kzoo.edu/convene/clearinghouse/Infill%20development.htm>

Figure 22: Downtown Logan City, UT



Source: Jake Young

• **Retail Management:** Main streets exist in direct competition with malls, shopping centers, and other centrally managed retail conglomerations. Small main street shops must incorporate certain design and management techniques applied by the best retailers. Storefront signs, while visible to the motorist, must be of a scale and quality that appeal to the pedestrian. The storefront, main sign, door, and awning should form a simple, unified, and unique design. Glass should be clear, undivided, and extensive. Awnings should reach across the sidewalk to give pedestrians the feeling that they have already entered the store (Duany, 2010).

Resources:

- Booth, Geoffrey, et al. Ten Principles for Reinventing Suburban Business Districts. Washington, D.C.: Urban Land Institute, 2002. http://www.smartgrowth.org/pdf/uli_Ten_Principles.pdf. Describes ways that suburban business districts can be revitalized to become more compact, mixed-use, walkable areas.
- Characteristics of Successful Downtowns. <http://www.cityofbinghamton.com/%5Clibrary%5Cpages%5Cdept-economic-development%5CSuccessful%20Downtowns%20by%20Gary%20Ferguson.pdf>
- Downtown Logan Specific Plan. http://www.loganutah.org/CD/DTLSP/Images/Logan%20Downtown%20SP_FINAL.pdf

Figure 23: Main Street, Bountiful, UT



Source: Jake Young

- **Buildings on the Sidewalk:** The traditional practice of building a parking lot in front of a shopping center or mall is **anti-pedestrian**. Shops need to front wide sidewalks and streets, thus promoting foot traffic. Increased foot traffic will increase the number of potential customers. Bountiful, Utah has an historic main street that is walkable and economically strong without big box retailers. It is mixed-use with restaurants, retailers, professional offices, residential over retail, art and dance studios, government buildings, green space, and other buildings. The shops are located on the sidewalk to create a quality experience and increase the convenience of walking. Buildings need to front the street correctly in order create to create the proper street corridor and be important components of a quality civic community.
- **Affordable Housing:** Providing affordable housing is important in every community. The State of Utah requires an affordable housing plan be developed by each city. There are numerous methods to plan for affordable housing.

Resources:

- Best Practices in the Production of Affordable Housing. http://thejcra.org/jcra_files/File/resources/best%20practices%20in%20affordable%20housing.pdf
- Affordable Housing Strategies: Regional Best Practices Toolkit. <http://archives.lib.state.ma.us/bitstream/handle/2452/113805/ocn748287369.pdf?sequence=1>
- HUD. <http://portal.hud.gov/hudportal/HUD?src=/states/utah/renting/tenantrights>

TRANSPORTATION AND INFRASTRUCTURE

1. Provide a balanced transportation network with improved roadway connections, enhanced public transportation options, and streets that encourage bicyclist and pedestrian mobility.

a. Reduce transportation infrastructure costs by building the development it serves more compactly.

b. Coordinate roadway planning to maximize connectivity, providing multiple routes to destinations, and reducing congestion.

c. Provide enhanced public transportation, matching capacity of service to growth pattern and population intensity. Some possibilities include a bus rapid transit (BRT) line from Hyrum to Smithfield (could transition to light rail if justified by future demand), express bus serving Logan Wellsville (this line eventually expanding to Brigham city) and Logan Preston, enhanced peak-time bus loops serving other Cache County communities, and peak-time vanpool service in other Franklin County communities.

d. Design connected streets to encourage multiple transportation modes as appropriate: walking, biking, driving, and public transportation. Pedestrian and bicycle safety and access are priorities, and bike commute routes should serve all communities.

2. Invest in efficient infrastructure systems to serve existing communities and future growth. Systems manage such services as water, sewer, waste disposal, and energy.



VIDEO CLIP
"Cleaning the Air"



VIDEO CLIP

"Invest in Green
Infrastructure"



Transportation and Infrastructure Toolbox

• **Transportation Land-use Connection:** A connection between transportation systems and land-use decisions is essential. Prior to the automobile, land-use decisions were primarily based upon the ability to walk to needed services. While the automobile is not a detriment to society it has changed how land-use decisions are made. Communities are sprawling outward due to the ease of vehicle transportation, while little to no thought is given to transportation connection and new land-use decisions. Every land-use decision, including mixed-use, industrial, commercial, or governmental development, should involve planning. They should consider

how the project will be serviced by public roadways, public transport, and how communities can provide necessary services within walking distance of each project.

Figure 24: Poorly-Connected Utah Neighborhood



Source: Jake Young

Figure 25: Well-Connected Utah Neighborhood



Source: Jake Young

Resources:

- Livability in Transportation Webinar Series. <http://youtu.be/Uorwly2jOEg>

• **Bus Rapid Transit (BRT):** Envision Cache Valley suggests that a BRT system could be implemented along the Hyrum to Smithfield and Logan-Wellsville-Brigham corridors. BRT is an innovative way to provide high capacity transportation at lower costs than rail. This system uses buses or specialized vehicles on roadways or dedicated lanes to quickly and

efficiently transport passengers to their destinations, while offering the flexibility to meet transit demands. BRT systems can easily be **customized to community needs** and incorporate state-of-the-art, low-cost technologies that result in **more passengers, less pollution, and less traffic congestion** (National BRT Institute, 2010). BRT also offers the option to convert to street car transit.

A local BRT system could utilize existing travel lanes and parking areas (such as shopping) along each corridor

for bus stops. Agreements could be forged with local businesses along the BRT route to use excess parking areas for bus stop parking. Riders could drive or ride bikes to the bus stops along each corridor. BRT systems are flexible and can change over time. Advanced technologies in recent years enable buses to run on compressed natural gas producing significantly less emissions, **which would significantly improve Cache Valley air quality.**

The Cache Valley Transit District provides a quality bus service throughout Cache Valley, from Richmond in the north (with a Franklin County

Figure 26: Bus Rapid Transit

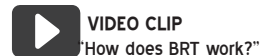


Source: David Kroomba

Figure 27: CVTD Transit Center



Source: Jake Young



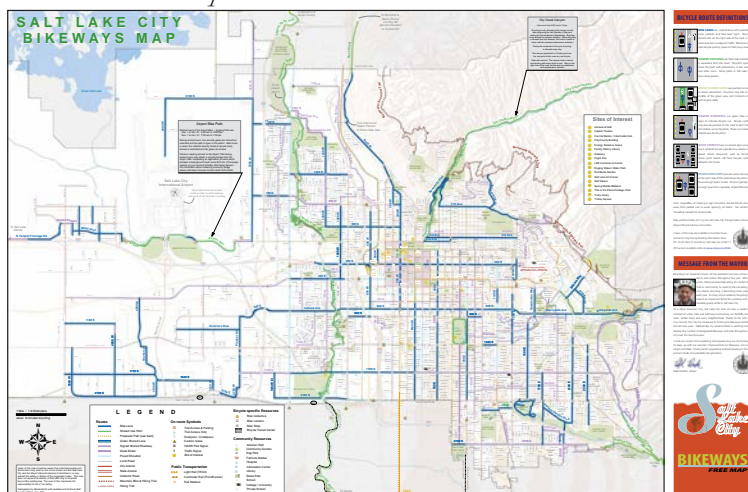
connection) to Hyrum in the south. The cost of the bus system is paid for by taxes and is fare free. Passengers may transport bikes on the bus. In December of 2011, CVTD reached the milestone of 2 million rides in a single year (Herald Journal, Dec. 8, 2011). The demand for CVTD bus system continues to grow as Cache Valley grows.

Resources:

- National BRT Institute, National BRT Institute Brochure. Available at http://www.nbrti.org/docs/pdf/BRT_promo_low.pdf
- Cache Valley Transit District, Route Information. Available at <http://www.cvtdbus.org/>

• **Bicycle Network:** There are multiple types of bicycle ways: shared routes, bicycle boulevards, bicycle lanes, bicycle trails, and others. Almost all bike routes in Cache Valley fit within the shared route category. Shared routes are low-speed streets in which cars and bikes mix comfortably. Many of the existing roadways in Cache Valley have adequate width for dedicated bike lanes. Increased emphasis on dedicated bike lanes combined with driver education could lead to **increased bike use**, which would reduce vehicular traffic. Along with bike lanes it is essential for businesses and municipalities to provide adequate bike parking. The presence of bike parking in front of or near to shops and other buildings is a strong incentive to choose biking over driving. Employers can also provide showers and changing rooms to encourage their employees to commute by bike.

Figure 28: SLC Bike Map



Source: <http://bikeslc.com>

Resources:

- National Center for Biking and Walking. www.bikewalk.org. Resources to make communities more walkable and bike-able.
- Salt Lake City Bike Map. <http://www.bikeslc.com/Wheretoride/SLCBikeMap.html>
- State Bicycle Facilities and Pedestrian Walkways Plan. http://www.wsdot.wa.gov/bike/bike_plan.htm
- Utah Bicycle and Pedestrian Master Plan Design Guide. <http://health.utah.gov/obesity/documents/Utah%20Bike%20Ped%20Guide.pdf>

• **Complete Streets:** For approximately the last 60 years, most streets in the United States have been designed solely for the movement of cars, thus resulting in less pedestrian and bicycle use. Streets are more than traffic conduits, they are public spaces and perhaps the primary venue for American civic life. **Neighborhoods and city center streets should be designed as places of gathering.** This requires the interdisciplinary participation of engineers, planners, architects, landscape architects, utility companies, and others. The resulting thoroughfares will typically provide narrower (slower-speed) travel lanes, bicycle facilities, on-street parking, continuous tree canopy, ample sidewalks, appropriate street furniture, and lighting. When street spaces become more pleasant places, more people are likely to leave the car at home (Duany, 2010).

Figure 29: Salt Lake City Street



Source: Jake Young



VIDEO CLIP
"Complete
Streets"

Street trees are essential to a quality neighborhood. **Every community and neighborhood should have a master street tree plan designed by a landscape architect with input by local arborists.** Street trees cool neighborhoods, absorb storm water, and add character to the neighborhood. Park strip widths should be minimum 6-10 feet to create a healthy environment for larger street trees.

• **Design speed of streets and roads:** The speed of vehicles is critical to pedestrian safety and comfort. At 20 miles per hour, a pedestrian has a 95 percent chance of surviving a collision, as compared to only 10 percent at 40 miles per hour (Duany, 2010). **Simply posting a slower speed limit will not sufficiently slow vehicles on streets that have an “open” feel and have long straight sections.** These types of roadways provide drivers a level of comfort which often times results in an increase of speed. Solutions to effectively control drivers’ speeds includes more narrow lanes, on-street parking, short straight sections, curvilinear roadways, bulb outs, crosswalks, and buildings fronting sidewalks. These measures can influence drivers to use slower speeds and to become more aware of pedestrian traffic.

Resources:

- Designing Walkable Urban Thoroughfares: A Context Sensitive Approach. <http://www.ite.org/emodules/scriptcontent/Orders/ProductDetail.cfm?pc=RP-036A-E>
- ITE. Guidelines for Neighborhood Street Design. 2001. Provides traffic engineers with information on how to build more neighborhood-scaled streets.
- Street Design Manual. www.nyc.gov/html/dot/html/about/streetdesignmanual.shtml
- Best Practices for Complete Streets. <http://www.completestreets.org/webdocs/resources/cs-bestpractices-sacramento.pdf>
- Small Trees for small places. https://www.rockymountainpower.net/content/dam/rocky_mountain_power/doc/Education_and_Safety/Tree_Planting_Pruning/2422_RMP_SmallTrees_Booklet_pages.pdf
- American Fork Tree Selection Guide. http://afcity.org/Portals/0/PublicWorks/Docs/Street%20Tree%20Guid_Adopted.pdf

• **Parking Solutions:** Parking is often considered a free commodity. Users of parking lots often do not bear the full cost, therefore parking is over-built and not used wisely. Free parking encourages vehicular traffic and has an opposite effect on public transportation ridership. Communities must understand that investing in parking facilities can often prevent investment in public transportation. Communities must determine the appropriate

policies and plan accordingly. Parking lots can be designed to be more pedestrian-friendly and aesthetically pleasing. Although parking lots are designed to store vehicles, by including pedestrian friendly walkways and other facilities, overall safety and aesthetics will be enhanced. Parking lot plans should include trees in a pattern that allows for the crowns to touch at maturity forming a canopy. Many parking areas do not receive enough patronage to warrant asphalt or concrete surface. There are a variety of surfaces that could be used to provide overflow or limited-use parking lots

Figure 30: Logan, UT Walmart Parking Lot



Source: Google Earth

Figure 31: South Carolina Walmart Tree Canopy



Source: Google Earth

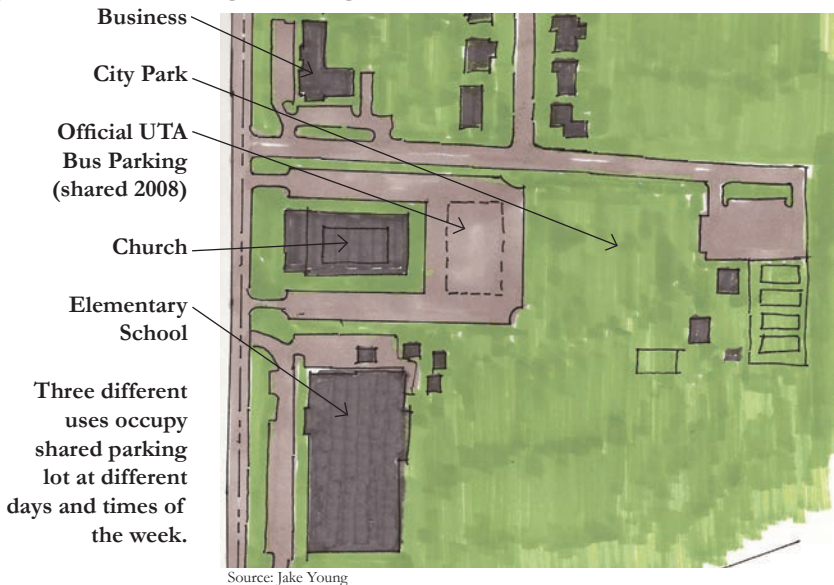
such as grass, grass-pave, pavers, gravel, gravel-pave, or permeable pavers. These alternative surfaces are more permeable than blacktop and can help with storm water management.

Resources:

- EPA. Parking Spaces/Community Places: Finding the Balance through Smart Growth Solutions. 2006. www.epa.gov/smartgrowth. Describes how communities balance parking and other goals to create compact, walkable places.
- Metropolitan Transportation Commission, Tool Box/Handbook: Parking Best Practices & Strategies For Supporting Transit Oriented Development In the San Francisco Bay Area, 2007. http://www.mtc.ca.gov/planning/smart_growth/parking/parking_seminar/Toolbox-Handbook.pdf. (Accessed February 2010).
- Parking Spaces/Community Places: Finding the Balance through Smart Growth Solutions. <http://www.epa.gov/dced/pdf/EPAParkingSpaces06.pdf>
- U.S. Parking Policies: An Overview of Management Strategies. http://www.itdp.org/documents/ITDP_US_Parking_Report.pdf

• **Parking Sheds:** Similar to water shed areas, communities can be delineated into parking or pedestrian sheds. Buildings within these parking sheds should be allowed to satisfy parking demands within a quarter-mile distance or ten minute walk, rather than provide all parking on-site. Using parking sheds encourages pedestrian activity within the parking area, which in turn can enhance the viability of shops. Many business owners do not

Figure 32: Shared Parking in Farmington, UT



know about the parking shed approach, which means that local government agencies could successfully implement the parking shed policy by garnering private support.



VIDEO CLIP
"Shared
Parking
Calculator"



Resources

- Parking Spaces/ Community Places. <http://www.epa.gov/dced/pdf/EPAParkingSpaces06.pdf>
- Best Smart Growth Parking Practices. http://contextsensitivesolutions.org/content/reading/parking_md/resources/parking_paper_md/
- Green Parking Lot. [http://www.streamteamok.net/Doc_link/Green%20Parking%20Lot%20Guide%20\(final\).PDF](http://www.streamteamok.net/Doc_link/Green%20Parking%20Lot%20Guide%20(final).PDF)

• **Efficient Infrastructure Planning:** One of the most notable consequences of Euclidean Zoning or Conventional Suburban Development (CSD) is “sprawl”, or in other words inefficient use of land, utilities, roads, parking, and energy. Under the Environmental Protection Agency (EPA) Morris Beacon Design was commissioned to study infrastructure savings of Smart Growth concepts. **It was found that infrastructure cost savings by using Traditional Neighborhood Design (TND) instead of CSD was between 32% to 47%** (Morris, 2010). Components of TND usually include: grid network of streets, alleys, walks, mixed-use, clustered housing, compact lots, housing variety, commercial nodes, and common green space. Variables considered in the study are lot size, housing type, density, street cross-sections, and community layout. Some of the most significant factors that will affect cost and energy savings by using TND include: land costs, materials, engineering methods, vertical construction techniques, and consumer market. Developers and municipalities are encouraged to carefully plan out neighborhoods, mixed-use, and commercial areas to have efficient land-use and infrastructure practices.

Figure 33: Analysis of CSD vs TND



Source: Morris Beacon Design

Resources:

- Infrastructure case study by Morris Beacon Design, 2010. <http://www.morrisbeacon.com/media/portfolio-projects/research/smart-growth/EPA%20infrastructure.pdf>
- Understanding Smart Growth Savings by Todd Litman, accessed 2010. http://www.vtpi.org/sg_save.pdf

NATURAL RESOURCES AND WORKING FARMS AND RANCHES

1. Protect, preserve and improve air quality, water quality, wildlife habitat, agricultural land, and the scenic beauty of Cache Valley.

a. Conserve floodplain, wetlands, wildlife habitat, scenic beauty, agricultural land, and improve air quality as development primarily occurs within existing communities.

b. Keep development away from natural features, like floodplains, wetlands, and steep slopes, that could pose a risk to public health and safety and diminish quality of life.

c. Maintain and improve natural resource networks and connections.

d. Maintain and improve air quality by reducing vehicle miles traveled.

e. Maintain water quality and encourage the efficient use of water.

f. Encourage the permanent conservation of working farms and ranches.

g. Encourage scenic corridor preservation to maintain views along roadways into the valley and between communities (ECV).

Natural Resources and Working Farms and Ranches Toolbox

• **Preserving Farms, Wetlands, and Sensitive Areas:** Natural areas such as rivers, wetlands, grasslands, forests, and more provide tremendous ecological importance to the Intermountain West. Federal environmental standards prevent the destruction of wetlands and other sensitive areas. Many developers see this protection as a nuisance and a depreciation of an important asset (the developable area). Embracing the protection of wetlands and sensitive areas could yield better results for developers and other citizens. A transfer of development rights (TDR) system could provide a positive solution to wetland preservation for developers and regulating agencies. When a developer can transfer their development rights from a farm, wetland, or sensitive area to a more appropriate development area, these important lands can be preserved. The end result of a TDR program is preservation of key land areas that could be used as an amenity for appropriate development areas. The development rights from sending areas could then be used to increase density in receiving areas, which could create a community with the necessary density to support all uses of a mixed-use development.

Beyond the regulatory aspect of wetland preservation it is recommended that a buffer of 50 to 100 feet be provided between wetlands and/or sensitive areas and adjacent development. This buffer protects wetlands and sensitive areas from nutrient loading, runoff, and development related pollution. Buffers can offer a strong community amenity in the form of parks, trails, or educational native landscapes. Logan City's code offers a similar park/open space creation process. In lieu, open space creation developers provide the city with funds to purchase open space for parks.

Resources:

- Trust for Public Land. Local Greenprinting for Growth. 2003. www.tpl.org. Helps communities and organization create conservation plans to meet community goals.
- Coffee Creek Center, see: <http://www.mindbend.biz/Print/CCC-Codebook.pdf>. This is an example of a master planned community located in Indiana that preserved and provided open space.
- Logan City Code. <http://www.sterlingcodifiers.com/codebook/>
- Grant Dehart, Maryland TDR Program, 2007. www.agroecol.umd.edu/files/Dehart%20Full%20Report%20HRHCAE%20Pub-2007-01.pdf
- State of New Jersey Department of Banking and Financing, Pinelands, New Jersey Development Credit Bank, 2010. www.state.nj.us/dobi/pinelands/pinelandsbank.htm
- American Farmland Trust. Fact Sheet: Transfer of Development Rights (TDR). 2001. www.farmlandinfo.org/documents/27746/FS_TDR_1-01.pdf
- Protecting Cache Valley's Working Farms and Ranches. <http://extension.usu.edu/cache/files/uploads/Chris%20Sands%20PowerPoint.pdf>
- Agricultural Land Preservation Tool Box. <http://www.brag.utah.gov/pdf/Ag/AgriculturalLandPreservationToolBox.pdf>
- Subdivisions Draw Residents With Farms. <http://www.npr.org/blogs/thesalt/2013/12/17/251713829/forget-golf-courses-subdivisions-draw-residents-with-farms>

• **Natural Corridors/Green Infrastructure:** Preservation of natural corridors within developed communities allows for better wildlife function. These corridors are typically either large uninterrupted natural areas near developed areas or small fingers of natural areas that extend into developed areas. It is important that natural corridors are linked throughout a developed area to allow for maximum wildlife function, pedestrian activity, bicycle trails, and other recreational uses.



VIDEO CLIP
"Invest in Green
Infrastructure"



The integration between cities and green infrastructure can provide the delicate balance between urban and natural spaces. Green Infrastructure can provide an important transitional element between stormwater drainage, natural drainage channels, and streams. **Green Infrastructure methodology is a more cost effective approach to a regional or community stormwater system than conventional piping approaches when planned and executed properly.** Green Infrastructure and Natural Corridors also act as the lungs of neighborhoods and communities as they clean air.

Resources:

- Conservation Fund. www.conservationfund.org. Has information on gateway communities, greenways, green infrastructure, and the connection between conservation and development.
- The Value of Green Infrastructure. <http://www.cnt.org/repository/gi-values-guide.pdf>
- Green Infrastructure Making Its Mark From Small Towns To Big Cities. <http://www.americanrivers.org/newsroom/blog/green-infrastructure-making-its-mark-10-7-2010.html>
- Parking Spaces/Community Places: Finding the Balance through Smart Growth Solutions. <http://www.epa.gov/dced/pdf/EPAParkingSpaces06.pdf>
- The Value of Green Infrastructure for Urban Climate Adaptation. http://www.ccap.org/docs/resources/989/Green_Infrastructure_FINAL.pdf
- Green Infrastructure. <http://www.greeninfrastructure.net/>

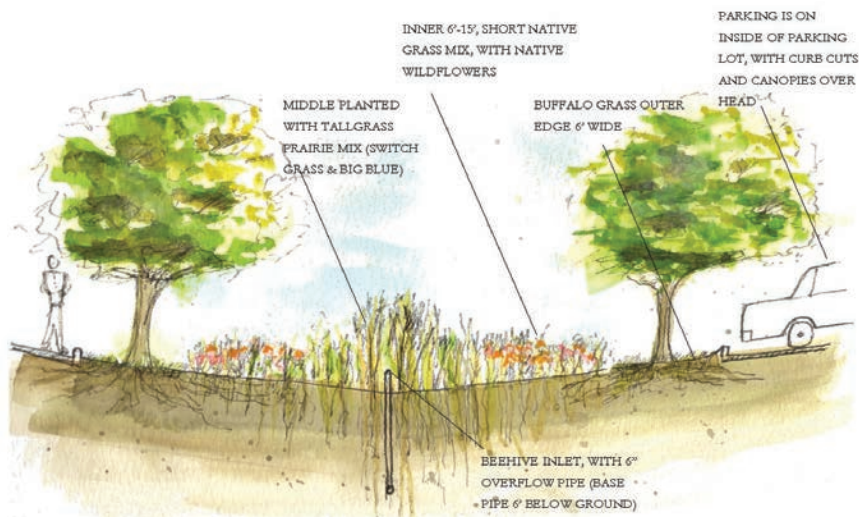
• **Stormwater Management:** Policies for stormwater management can vary from community to community. One objective of stormwater management that is consistent in all communities is to not increase the amount of stormwater runoff from the pre-development level. Traditional methods to manage the increased runoff include piping, inlet boxes, large retention/detention areas, and discharging into a natural water body. An alternative approach to storm water management might include: permeable surfaces, bio-swales, utilization of existing permeable material, attempts to mimic existing drainage patterns, and minimization of the overall impact of a development.

First, implementation of permeable surfaces. Permeable concrete, gravel, or pavers can drastically reduce the stormwater runoff, which in turn reduces the volume of stormwater storage required. **The second sustainable approach to stormwater runoff is using bio-swales** located in planters, park strips, parking islands, and parks. The polluted runoff is allowed to percolate through the bio-swales which are designed to remove the pollutants. Plants with deep roots create a sponge affect

Figure 34: Bio-swale, Seattle, WA



Figure 35: Bio-swale Schematic Drawing



Source: Jake Young



VIDEO CLIP
"Stormwater Runoff"



and increase the ability of the soil to percolate stormwater. **Third**, existing permeable soil or layers on a site can be identified through soil studies and be preserved for stormwater collection and percolation. **The fourth method is to follow existing drainage patterns.** By following existing drainage pathways less fill material is required and the site topography is less disturbed, which allows for runoff to be conveyed over the landscape without the need for the traditional pipe and pit system. **The fifth method is to minimize the impact area of development.** This can be accomplished by building vertically rather than horizontally. The reduced footprint of the development could provide for increased landscape areas and parks which reduces runoff. Smart growth development is compact, high quality, and minimizes land disturbance.

Resources:

- City of Portland, Portland Stormwater Management, 2010. <http://www.portlandonline.com/BES/index.cfm?c=34598>
- Low Impact Development Stormwater Techniques, 2010. <http://www.lid-stormwater.net>
- State of Utah Stormwater Program, 2010. <http://www.waterquality.utah.gov/UPDES/stormwater.htm>
- Stormwater Best Management Practice Handbook: Construction. <http://www.sbpprojectcleanwater.org/Documents/ConstructionActivities/CASQA2003Construction.pdf>



VIDEO CLIP
"Rain Gardens"



• **Curbs and Swales:** As with all problems there is not a one size fits all solution. The method with which stormwater is collected along a street depends upon the urban or rural location. Often urban streets collect stormwater through a curb and gutter and direct water through pipes and boxes to a central location. In a rural setting swales are used to collect stormwater runoff and allow the water to percolate. Green streets use curb with slots draining to an urban rain garden or the park strip. The urban rain garden is a depressed area to collect and percolate stormwater from the curb. This method allows the stormwater to be disposed of and treated on-site rather than directing the water to an off-site facility. Rain gardens can also be located on residential or commercial lots.

Rain from downspouts enters depressed landscaped areas and is detained while the proper plants help absorb the water into the soil.

Figure 37: Stormwater Basin, Kaysville, UT



Source: Jake Young

Figure 36: Open Swale Inlet, Topeka, KS



Source: Jake Young

Resources:

- North Carolina State University, Design guideline for Rain Gardens, (NC State University, 2010). www.bae.ncsu.edu/stormwater/PublicationFiles/DesigningRainGardens2001.pdf
- Topeka, KS City Stormwater Program (2010). www.greentopeka.org

• **Pavement Materials:** The success of a street as a pedestrian environment depends more on its spatial qualities than on its materials. Funds spent on expensive surfaces, elaborate light standards, and decorative trash receptacles are usually better used elsewhere - on street trees, for example. The best pavement materials are usually those with an established

track record, and those which are in open stock to ease maintenance and replacement (Duany, 2010). These materials could be pavers, grass integrated surfaces, crushed rock, gravel, asphalt, and pervious pavement. Different surface treatments are appropriate across the urban to rural transect. In urban areas, trees and landscaping grow better when water is allowed to percolate to the roots. Salt Lake City recently redesigned a downtown parking lot with permeable concrete to reduce stormwater runoff and increase percolation to trees and other plants. In rural settings, gravel or crushed stone sidewalks, pathways, and roadways allow for percolation and offer a surface that is consistent with the setting.

• **Water Conservation and Water-Wise Principles:** Utah is the 2nd driest state in the nation with one of the highest rates of water consumption. Living in the desert requires us to be responsible water users. Utah is growing and all residents need to make water-wise choices (Water-Wise Utah, 2010). There are many water-wise principles that can apply to outdoor and indoor water use. Municipalities can make a difference by recommending citizens change a few basic habits. The following are a few indoor suggestions:

- Turn the water off when you brush your teeth.
- Don't use the toilet as a trash can. Flushing facial tissues, dental floss, and Q-tips is not a good way to dispose of these items.
- Plug the sink when washing your hands and/or face.
- Try to limit your showers to 5 minutes or less. Limiting your shower time can save a lot of money, as well as make everyone in your family just a little happier.
- Take baths that are only 1/2 full. What do you need so much water for, anyway! Scuba Diving?
- Keep a pitcher of drinking water in the fridge.
- Make sure the dishwasher and washing machine are full before running them. (Water-Wise Utah, 2010)

Resources:

- EPA. Growing Toward More Efficient Water Use: Linking Development, Infrastructure and Drinking Water Policies. 2006. www.epa.gov/smartgrowth. Focuses on the nexus between the supply of drinking water, its costs, and growth patterns.
- EPA. Protecting Water Resources with Smart Growth. 2004. www.epa.gov/smartgrowth. Discussed 75 policies that can be used to protect water quality through smart growth.

• **Water-Wise Landscaping:** Water is a precious resource. As population grows and water demand increases landscapes will need to adapt, it is encouraged to plan and prepare ahead of time. Water-wise landscapes can be both beautiful and functional.

Figure 38: Water-Wise Residential Landscape, Salt Lake City, UT



Source: Jake Young

There are seven principles of water-wise landscaping:

1. Planning and Design
2. Soil Analysis
3. Appropriate Plant Selection
4. Appropriate Lawn Areas
5. Efficient Irrigation
6. Proper Use of Mulches
7. Proper Maintenance (Weber Basin Conservancy District, 2010)

Southern Nevada Water Authority suggests a Cycle and Soak method when landscapes are irrigated. Desert ground can often be solid and takes time to open up to water infiltration. Rather than applying all the daily needed water in one instance, it is more effective to apply 1/3 to 1/2 the needed water for turfgrass areas or planter bed. Then wait one hour and reapply. The soil and plants will better absorb water and you will have less run-off (SNWA, 2010). Water-wise landscapes can be beautiful and can conserve.

For ideas check out the Ogden Botanical Gardens, Weber Conservation Learning Garden, Utah botanical center, and others.

Resources:

- Slow The Flow. www.slowtheflow.org
- Jordan Valley Water Conservation District. www.conservationgardenpark.org
- The Southern Nevada Water Authority. http://www.snwa.com/land/irrig_cycle.html

• **Protecting Cache Valley Agricultural Land:** The Cache County Agricultural Advisory Board (CCAAB) was established in 2002 as the first advisory board of its kind in the State of Utah. One of the purposes of the CCAAB is to provide tools and implementation strategies to preserve agricultural land in Cache Valley. The CCAAB identified a number of reasons why protection of agricultural land benefits Cache Valley, such as a sound fiscal policy, good economic development policy, promoting a diverse economy, minimizing sprawl, ensuring food security, protecting our natural resources, and protecting our quality of life.

Figure 39: American West Heritage Center



Source: Jake Young



VIDEO CLIP
"Bee Keeping"



One tool that has been successful in protecting Cache Valley agricultural lands is conservation easements. Conservation easements are permanent easements voluntarily attached to a piece of property that essentially removes the property of development rights. Property owners that elect to use conservation easements to protect their land are paid through federal, state, and private funding. As of 2008 9,327 acres of land have been preserved in Cache Valley through conservation easements (Chris Sands, 2008). The Zollinger Tree Farm located on the east foothills of River Heights represents 50 acres of that total. The preservation of the tree farm ensures that vital agricultural lands that contribute to the local economy will be preserved in perpetuity. Another successful application of conservation easements is the American West Heritage Center. The center has protected 66 acres of agricultural land along an important Highway 89/91 corridor. These examples of preservation will provide future generations a glimpse of the current state of Cache Valley (Christopher Sands, 2008). The American West Heritage Center is a working farm that teaches people about the life and history of the American West. The land also preserves great views of the Wellsville Mountains.

Resources:

- The Utah State University Forestry Extension, Conservation Easement Programs. http://www.extension.usu.edu/forestry/Landowner/taxes_easement%20programs.htm. This document provides information on four separate conservation programs.

• **Edible Landscapes and Community Gardens:** A few dollars spent on vegetable seeds or starter plants can have an amazing return on investment. Personal or community gardens provide a very effective method to provide seasonal local produce at an affordable price. \$20 worth of garden seeds can produce hundreds of dollars worth of vegetables. In 2009 the USU community garden in Kaysville Utah produced 7,112 pounds of produce which was donated to the food pantry (Utah State Today, 2009).

Figure 30: Community Garden in South Jordan, UT



Source: Jake Young



VIDEO CLIP
"Edible Landscapes"



Resources

- Utah State University Extension: Yard and Garden <http://extension.usu.edu/yardandgarden/>
- Deseret News: Vegetable gardening 101. <http://www.deseretnews.com/article/700022022/Vegetable-gardening-101-Larry-Sagers-tells-you-how-to-grow-your-garden.html?pg=all>
- Community Gardens and Low Income Families. <http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1059&context=honors>

RECREATION

1. *Maintain and improve access to recreation by connecting local recreational amenities to a regional network.*

a. Improve and expand bicycle and pedestrian trail networks, including the Bonneville Shoreline Trail (BST). Link local recreation systems to the BST. Use the BST to provide access to other regional amenities, including regional recreation centers, but also to recreation in more natural areas, like canyon trails and the mountains.

b. Create new local and regional recreation areas, including parks, greenways, and linkages.

c. Expand local recreational systems, providing small parks located near where people live and linked by trails for walking and biking (ECV, 2010).

Recreation Toolbox

• Walking and Bicycle Trails Network:

As stated before, the most common bicycle travel route in Cache Valley is the shared route on low speed streets where cars and bikes mix comfortably. Bike routes have separate demarcated bike lanes. Cities can help plan for and promote cycling as transportation by developing a map. CVTD services accommodates and encourages bike use. Bus and bike transportation is great for longer distances. A network of trails provides many benefits to the local community including:

- Economic recreation spending
- Increased real estate values
- Decrease traffic/pollution
- Increased health



VIDEO CLIP
"Building Healthy
Multi-Use Paths and
Trails in Utah"



Figure 40: Logan River Trail



Source: Jake Young

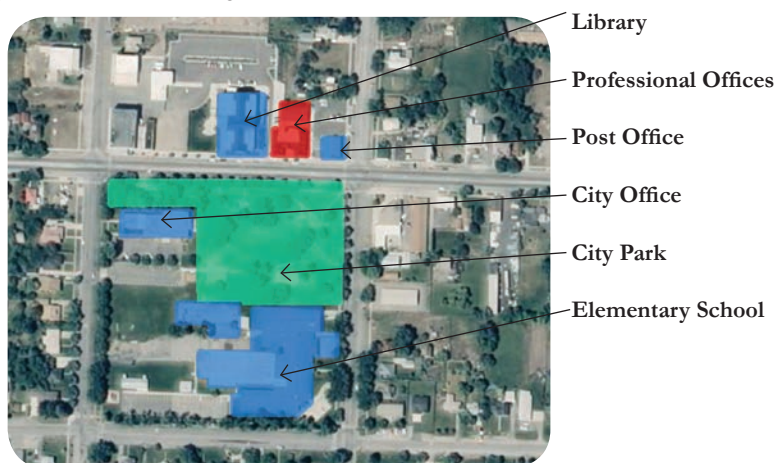
- Attractive communities
- Safer routes for pedestrians/cyclists, tourism
- Community satisfaction by residents

Resources:

- National Center for Biking and Walking. www.bikewalk.org. Resources to make communities more walkable and bike-able.
- Cache County Trail and Bicycle Routes. http://www.bonnevilleshorelinetrail.org/idahotologan/pdfs/cachetrail_map.pdf
- Logan City Urban Trail Guide. http://www.loganutah.org/parks_and_rec/parks_and_trails/images/UrbanTrailGuide.pdf
- Mountain Trails Foundation. <http://mountaintrails.org/>
- American Trails. <http://www.mlppubsonline.com/publication/?i=81590>

• **Civic Sites:** Civic buildings such as libraries, recreation centers, hospitals, museums, administrative offices, etc. will be required as communities grow and mature. As development occurs, provisions should be made for tracts of land to accommodate civic sites. These sites should be located near the center of town associated with a public square or green area. Hyrum City has established an area for civic sites with its public square. The public square houses the Hyrum City offices, an elementary school, and the Hyrum City library is located north across the street from the public square. The public square is located generally in the center of the community. If there is not an immediate need for civic buildings, designated civic sites can be landscaped to serve as open space for the community.

Figure 41: Civic Site in Hyrum, UT



Source: AGRC/Jake Y./Danny M.

• **Local Open Space/Open Space Types:** Each community should provide open space in many forms including public squares, recreational parks, pocket parks, trail ways, and community gardens. These open spaces provide a network of opportunities for the community to recreate, which in turn promotes a healthy lifestyle and happy citizens. Trails and parks connect people to open spaces, offer alternative methods of transportation, offer places to recreate and exercise, bring community's together, and create exciting memories for children. While planning and designing new parks in new development is essential, parks and trails can also be developed from existing under-used or abandoned land. Community gardens are good companions to parks and are proven to be successful in other Utah Cities. The following is a list of opportunities to create new trails and parks as **infill type projects:**

- Unneeded parking can be turned into parks.
- Abandoned rail road lines make great trails.
- Community centers, public buildings, or outdoor spaces can be turned into plazas or parks.
- **Irrigation canals make great trails** and are abundant in Cache Valley.
- School grounds can be renovated or be made accessible to the public as parks and playgrounds for evenings and weekends.
- Utility easements are often compatible as trails and can serve to connect neighborhoods and communities.
- Abandoned lots can be turned into temporary or permanent parks.
- Some roof tops can be turned into gardens.

The Whittier Community Center in Logan, Utah transformed excessive parking space into the Adventure Park in 2009. The park construction was largely funded and built by volunteers. Its a great example of creating more park and playground space as an infill project. The park has been well received and used as a destination playground and an addition to the community center.

Parks should be distributed so as to be within a two-minute walk of most households (1-3 blocks) and not require that children cross major streets. Pocket parks can range in size but are typically a quarter acre and can occupy vacant lots. Optimal locations for pocket parks are at intersections

within a development to provide access from more households within a two-minute walk. These parks may be owned and maintained by the community or by a homeowners association. Pocket parks are an economical and sustainable solution by providing open space closer to users and at a smaller scale as neighborhoods are built.

Figure 42: Adams Park



Source: Jake Young

Active recreational parks are also a vital part of a community. These parks could be part of public squares, near schools, or civic centers within access of children on bicycles. A general common practice is to plan parks, trail ways, community gardens, etc. within biking or walking distance so that recreational activities do not begin with a drive in the car.

Adams Park is a great example of the park serving double duty as a local park and a playground for Adams Elementary School. Many Cache Valley cities and neighborhoods could benefit by turning local school grounds into neighborhood parks.



VIDEO CLIP
"Community
Spaces"



VIDEO CLIP
"Pocket Parks"



Resources:

- Project for Public Spaces. www.pps.org. Provides resources on how to design good public places.
- Pocket Parks. http://depts.washington.edu/open2100/pdf/2_OpenSpaceTypes/Open_Space_Types/pocket_parks.pdf
- Planning for Parks, Recreation, and Open Space in Your Community. http://www.rco.wa.gov/documents/manuals&forms/CTED-IAC_parks_rec_plan_guide.pdf
- Pathways for Play. <http://www.pathwaysforplay.org/>

INTERGOVERNMENTAL COORDINATION

1. Encourage close coordination among local governments, school districts, universities, businesses, and places of worship to address growth issues and implement the Cache Valley Vision.

- a. The Regional Council meets regularly, providing coordination, leadership, and resources to implement the vision.*
- b. Other groups, including the Cache Valley Mayors' Association, should assist in local implementation of the regional vision.*
- c. Work together to implement regional-scale priorities, like the transportation and conservation/ natural resource principles, which will contribute to accomplishing a good general growth pattern and strong economy.*
- d. Work together to provide education and training to better understand policy options and implementation tools.*
- e. Work together to create model tools that can be adapted and implemented locally.*
- f. Identify policies and incentives that could encourage growth into efficient patterns that save tax payer dollars and safeguard natural resources on which we depend.*
- g. Ensure ongoing citizen involvement.*
- h. Work to improve quality of life for current citizens and future generations (ECV, 2010).*

Intergovernmental Coordination Toolbox

• **Replace No Growth with Good Growth:** The very term smart growth implies that development can be positive, and until the advent of sprawl, this was the common understanding. Today, the poor quality of our built environment has convinced many people that good growth is not possible, and that the only option is to stop development entirely. Such an approach is unattainable, as the population of Cache Valley is expected to double by the year 2040 (ECV, 2010). **No-growth campaigns, even when successful, tend to last one or two political terms at most, and often serve as an excuse to avoid planning altogether.** When such policies are eventually reversed due to housing shortages, growth quickly resumes in its worst form. The first step of effective long-term planning is to admit that growth will occur, and the second step is to focus on its quality (Duany, 2010).

• **Community Involvement:** Involvement from the citizens of Cache Valley is one of the most important factors that will shape the future

of Cache Valley. Amazing support from local citizens was given during the Envision Cache Valley process, but there needs to be even further support. The tools and concepts presented in this pamphlet are simply just ideas until citizens care enough about Cache Valley to implement smart growth principles. There are many forums where citizens can express their desires for the future of Cache Valley, such as: Cache County Council and Planning Commission, local municipal Council and Planning Commission, Cache Metropolitan Planning Organization, Bear River Association of Government (BRAG), growth summits, and many others. We need to ensure that our voices are heard resulting in a future Cache Valley that is according to the citizen's preferred vision.

• **Growth Priorities:** The state of Idaho recently published Idaho Smart Growth Citizen's Guide. This guide helps citizens understand smart growth and how to become involved in their community. The Envision Cache Valley process identified clear growth priorities based upon citizen input. **The motto developed was "Keep the City, City and the Country, Country"** (ECV, 2009). This simple statement sets in motion a clear priority to provide development within existing city areas while preserving existing agricultural lands. This can be achieved by prioritizing development types to match the above statement. Growth priorities should encourage revitalization, in fill and extension of the existing urban areas first, suburban areas second, and development of green fields being the third priority. This order of priorities will enable communities to implement the vision to *Keep the City, City and the Country, Country*.

• **Coordinating Policy:** The Envision Cache Valley principles apply to multiple governing agencies, such as Cache County, Cache Metropolitan Planning Organization, Cache Valley Transit District, BRAG, Utah State University, all municipalities located within Cache Valley, and other organizations (school districts, United States Postal Service, etc.). The implementation of a vision that encompasses many agencies requires intergovernmental communication. Organizations need to implement the vision, adopt principles of the vision, involve grass roots citizen groups, and utilize the tools of this pamphlet. It is clear that the citizens of Cache Valley embraced the Envision Cache Valley principles, but the principles will not be properly implemented without a coordinated planning vision from all of the involved agencies, communities and citizens.

ENERGY CONSERVATION AND RENEWABLE ENERGY

Our ability to reduce our carbon footprint by energy conservation and renewable energy development will determine the legacy that defines our current generation. Energy conservation is an overall awareness of the amount of energy being consumed and identifying methods to reduce that consumption. Renewable Energy is delivered in many forms such as solar, wind, hydroelectric, geothermal, solar thermal, etc (ECV, 2010).

Energy Conservation and Renewable Energy Toolbox

• **Energy Conservation:** Energy conservation is an important element of energy policy. Energy Conservation reduces the energy consumption and energy demand per capita and thus offsets some of the growth in energy development needed to keep up with population growth. This reduces the rise in energy costs, and can reduce the need for new power plants and energy imports. The reduced energy demand can provide more flexibility in choosing the most preferred methods of energy production.

The population growth predicted to occur in Cache Valley will result in an increased demand for energy. A small amount of energy conservation by the residents of Cache Valley could offset portions of the future energy demands. Municipalities are encouraged to educate citizens in energy conservation methods, including:

- Turn out lights when leaving a room.
- Wherever practical, use a task light instead of the overhead lighting.
- Use natural light when available by turning off lights near windows.
- Have maintenance staff de-lamp fixtures that produce a harsh glare or in areas that are over lit.
- Avoid using incandescent lights when possible. Compact fluorescent use less than one third of the energy and last up to ten times longer.
- Turn off computers and or computer monitors when not in use. (Utah EPA, 2010)

Resources:

- Utah EPA, Energy Conservation at Work and School, 2010. Available at www.greenchoices.utah.gov.
- Utah State University Forestry Extension, Planting Trees for Energy Conservation, 2008. Available at www.extension.usu.edu/forestry. This document describes how trees used to shade homes could provide significant energy conservation.

• **Sustainable Building Rating System:** A green building rating system provides the owner with the assurance that the home meets certain “green” requirements. There are many existing green rating systems on the market, such as LEED for Homes or Energy Star, that outline a set of requirements to receive a green home certification. The format of the rating system is not as important as the purpose behind the rating system. A green home rating system enables new homes and existing homes to become more energy efficient. This efficiency could be attained by increased insulation, compact fluorescent light bulbs, high efficiency furnaces and air conditioners, high quality windows, the use of local materials, low-flow faucets and appliances, and many other methods. The overall energy footprint of Cache Valley residents will be reduced as home builders, commercial builders, architects, potential home buyers, and existing home owners embrace sustainable buildings.

Beyond the energy conservation savings, a green certified home may qualify for special financing terms that will enable the home buyer to finance energy efficiency improvements into the loan. This provides consumers with a more efficient home, which results in lower utility bills over the life of the home.

Resources:

- Energy Savers. <http://www.energysavers.gov/>
- LEED Rating System for green buildings. <http://www.usgbc.org/leed>
- Energy Star for products and practices. <http://www.energystar.gov/>

• **Renewable Energy:** Currently there are many incentives provided by the State and Federal governments to design and construct renewable energy projects. The incentives vary for commercial and residential applications and the amounts of incentives vary from year to year. Renewable energy sources include solar, wind, hydroelectric, geothermal, solar thermal, geothermal heat pumps, and biomass. These technologies provide energy

Figure 43: USU Agriculture Building



Source: Jake Young

that is renewable in nature and lessens the demand on the traditional energy grid. Solar energy has become common practice in new construction and as the technology advances it is becoming more affordable. The great attribute of solar energy is that it can be used in all types of places and be mixed with multiple land-uses or buildings. Solar panels can be used on roof tops, over parking lots, and even as sun shades on buildings. The new Utah State University Agriculture Building has solar panels on the south side to shade windows and create solar energy at the same time.

Cache Valley has a number of renewable energy projects, both private and public, that are either in design or have been constructed. In 2009, Campbell Scientific installed a 96 KW-h solar panel project. A private land owner installed a micro-hydroelectric system that will provide on average 96-KW-h per day. These projects combined with many others are helping offset the existing energy demand.

There are many renewable energy products available for the average-sized home to the largest commercial application. A qualified renewable energy designer can complete an analysis of a project's renewable energy potential and determine which technology fits a given project.

Resources:

- Database of State Incentives for Renewables and Efficiency, www.dsireusa.org. A database of the available renewable energy incentives for each state.
- State of Utah Governor's Energy Advisor. www.energy.utah.gov.

Figure 44: Solar Panels Over Parking Lot, Las Vegas, NV



Source: Jake Young

Figure 45: Cache Valley Micro Hydro Project



Source: Danny Macfarlane

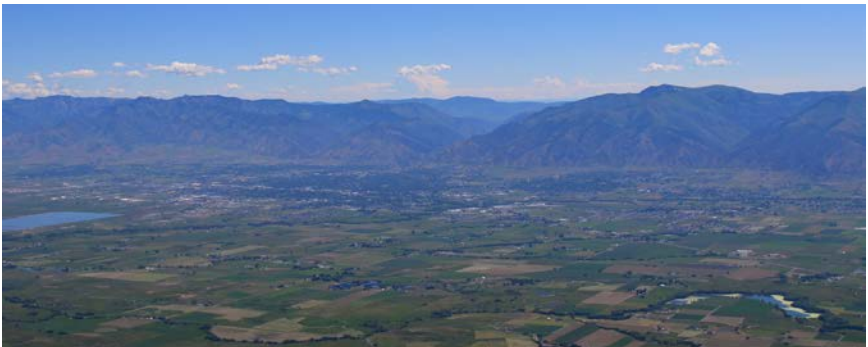
SUMMARY

As Cache Valley grows and nearly doubles in population every 30 years it is essential that local leaders understand the long-term consequences of decisions. Many of the different aspects of agriculture, development, city management, education, community health, natural environment, housing, business, and transportation are carefully woven together. Leaders should weigh how decisions affect all the various systems in the valley. **Keeping Cache Valley beautiful and a wonderful place to live will require changes in zoning ordinances, land use planning, transportation systems and most of all, a paradigm shift.**

Smart Growth for Cache Valley has many planning tools, success stories and strategies for solving major issues that we currently face. Some of the issues are:

- Air Pollution
- Loss of Agriculture Lands and Open Space
- Obesity Epidemic and Inactivity
- Traffic Congestion
- Transient Neighborhoods
- Fragmented New Development
- Inconsistent Commercial Centers
- Water Mismanagement

We encourage local leaders to carefully study the issues, planning solutions and implement changes that will guide Cache Valley to be a healthy and happy community.



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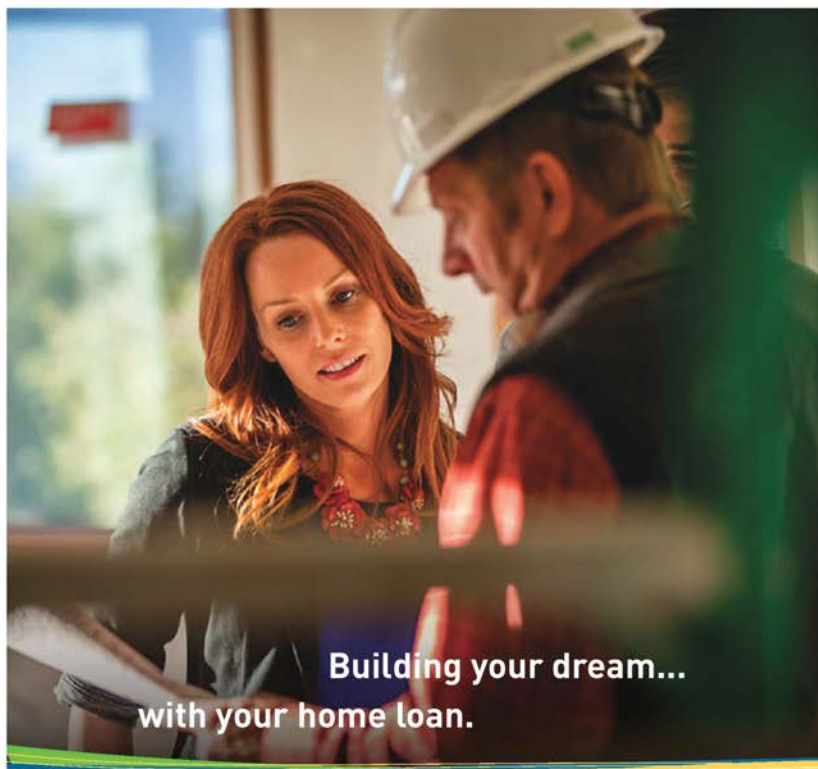
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