

6 PROPOSED LAND USES

6.1 LAND USE PLAN

This chapter interrelates all of the elements of the General Land Use Plan that have implications for the arrangement of uses on the land. The resulting Land Use plan, in the Appendix, is a graphic expression of the implementation of the various policies that make up the General Land Use Plan.

The General Land Use Plan is an important guide for decisions related to development. It encompasses areas within the City as well as areas anticipated to be annexed to the City in the future. The Land Use Plan is a visual reference for public agencies or private individuals seeking information about land development objectives of the City.

In addition to the *designations* on the Land Use Plan, a number of *policies* have been adopted to guide future City decisions on a case-by-case basis. These policies are listed below each section of this Land Use Plan.

The Land Use plan is *general* in that the land use designations are approximate; they may be indicated as "bubbles" that do not necessarily follow the existing property lines. Property-specific conditions are taken into account when the Planning Commission and City Council are requested to zone, rezone and/or grant a building permit for a specific parcel.

There are still major areas within the City boundary that are undeveloped. These are shown in Table 6-1.

Although there are natural constraints that preclude development in some areas, it is clear that there is much yet to be determined about the future form and character of St. George.

Table 6-1: Summary of major undeveloped areas of St. George.

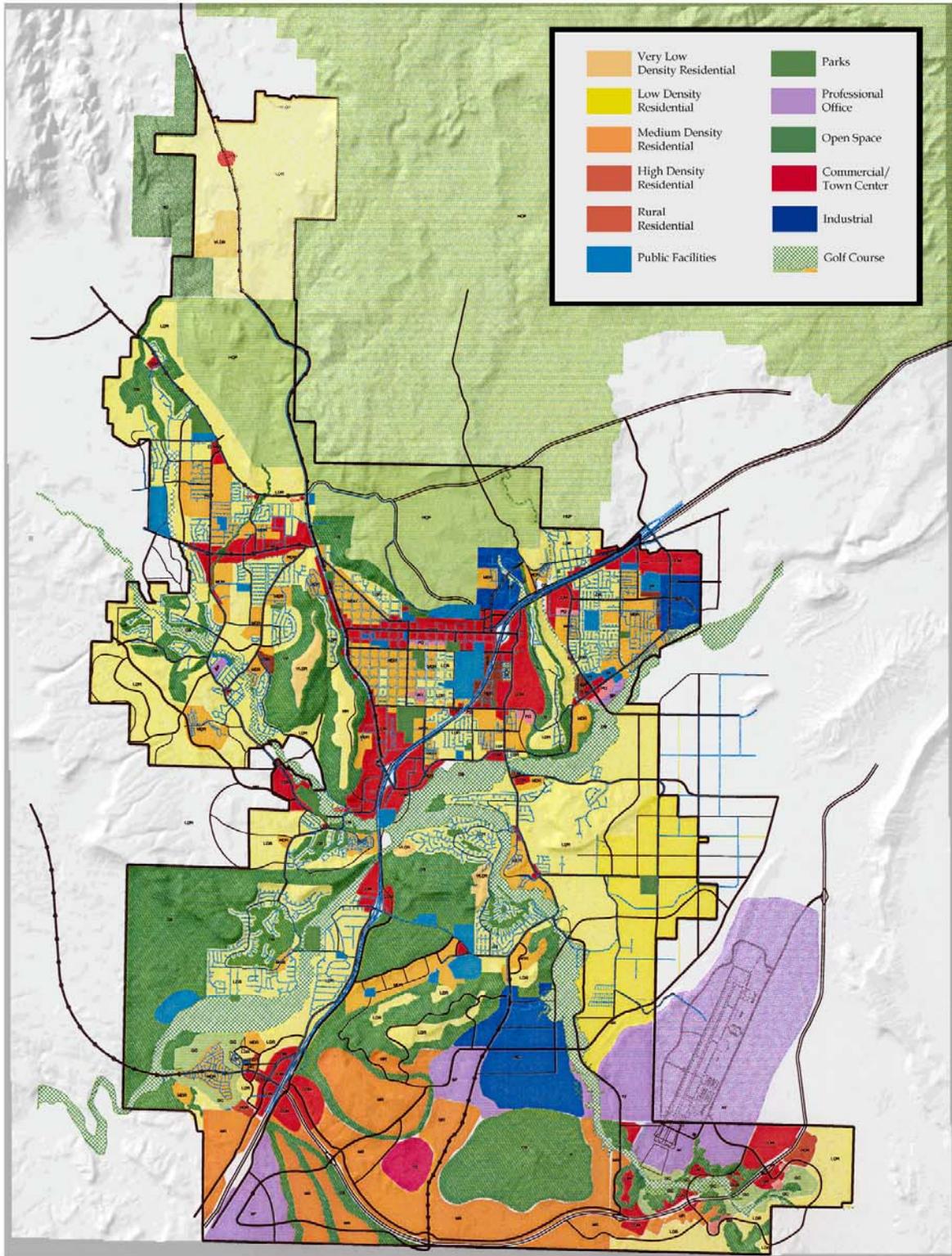
AREA	SIZE
Ledges Annexation Area	2545 ac.
South Block/ Leucadia	10,000 ac.
Plantations	731 ac.
Southgate	220 ac.
Little Valley/ Washington Fields	300+ ac.
TOTAL	13,700 ac.

6.2 ZONING MAP VS. LAND USE PLAN

The Zoning Map (a separate document) and the Land Use Plan (included in this document) work hand-in-hand with each other. The Land Use Plan indicates general density ranges and indicates how development is to be located on the land, with special regard to preserving special natural features. The Zones in the Zoning Map are legal designations that assign a specific overall density to a specific tract of land. In most cases, the zoning is uniformly applied to a whole parcel of land. By contrast, the Land Use Plan follows land forms, floodplains and road patterns (rather than ownership boundaries) it indicates more generally how land uses should be arranged on the land.



Figure 6-1: An aerial view of Sun River



LAND USE PLAN

6.3 RESIDENTIAL LAND USES

The Land Use Plan proposes the following residential density ranges:

Very Low	up to 2 units/acre
Low	2.1 to 4 units/acre
Medium	4.1 to 9 units/acre
High	9.1 to 22 units/acre

The above ranges may be converted to specific zoning districts based on case-by-case evaluation of the suitabilities of a particular area. Table 6-3 shows some of the potential Zone categories that could fulfill the designations on the Land Use Plan.

In the General Land Use Plan, the majority of the more recent development, (and most of the undeveloped residential land) in St. George is designated Low Density. There is a significant development capacity (6500 dwelling units) remaining in a number of approved-but-unbuilt projects, as shown in Table 6-2:

Table 6-2: Comparison of approved vs. built residential units.

Project	Total approved units	Approx. built to 2002
Entrada	710	150
Hidden Valley	1500	19
Fossil Hills	500	60
Stonebridge	673	100
Stone Cliff	661	62
Sunbrook	1100	350
Sun River	2391	300
TOTAL	7535	1041
Approved but unbuilt	6,494	

Medium Density designations are located in the older parts of the city, near arterials or major collector roads and as a transition zone, or buffer, between low-density residential areas and other more intense uses, such as commercial or industrial use. The interiors of central city blocks have been developed with Medium Density town home housing.

Building at higher densities is one of the most significant ways to reduce housing costs. This is important for retirees, college students, young couples and service workers. Higher density housing also fills a demand in St. George for luxury housing, such as condominiums.

Table 6-3: Comparison between Land Use Plan and Zoning Map designations

General Land Use Plan Designation/Purpose:	Density (DU/Acre)	Translates into these Zoning Districts:
Residential Very Low Density (VLD): To preserve agricultural land and steep slopes or dominated by rock outcropping or other unique geologic features. Intent is to encourage clustering in areas suitable for development and preserving remaining area as open space.	Up to 1 d.u./ac.	RE-5, R-1-40, Planned Development Residential
Residential Low Density (LD): Most single family type developments. Townhome projects may be allowed within these areas, provided the density limits are met. Low density is the predominant residential land use in the general plan.	1 to 4 d.u./ac.	R-1-8, R-1-10, R-1-20, R-1-40, RE-12.5, RE-20, RE-37.5, Planned Development Residential

General Land Use Plan Designation/Purpose:	Density (DU/Acre)	Translates into these Zoning Districts:
Residential Medium Density (MD): Townhomes, condominiums, apartments, duplexes and similar dwelling units that are more compact or have a higher density of development than standard single family homes. Homes on 6,000 sq. ft. lots are also considered to be in this land use category.	5 to 9 d.u./ac.	R-1-6, R-1-7, R-2, R-3*, Planned Development Residential, MH-6, MH Parks *up to nine d.u./acre
Residential High Density (HD): Areas adjacent to major roads and other services which are conducive for higher density apartment or condominium developments. High density is found near Dixie College for student housing or can be appropriate adjacent to commercial areas and away from single-family developments.	10 to 22 d.u./ac.	R-3, R-4, Planned Development Residential
Agricultural (A): Little Valley and Washington Fields areas for low density housing and allowing large animals. Areas for commercial agricultural and dairying operations. Homes can be clustered on smaller lots to preserve agricultural land and open space, provided overall density remains unchanged.	up to 1 d.u./ac.	A-1, A-5, A-10, A-20, RE-5
Parks (P): Public recreation areas including sports fields and playground areas.	N/A	Public parks may be allowed in all zoning districts.
Open Space (OS): Permanent open space, but also allowing limited development activity such as gravel extraction, golf course development, livestock grazing, recreational facilities and public utilities.	N/A	Open Space
Public Facilities (PF): Schools, libraries, fire stations or similar public facilities.	N/A	Public facilities may be allowed in all zoning districts.
Professional Office (O): Development of professional offices including business and medical offices but not including retail sales. Often a buffer between residential and commercial or industrial areas.	N/A	A-P, Planned Development Commercial
General Commercial (C): Various commercial uses, including the General Commercial areas (C-3), Highway Commercial (C-2) and Neighborhood Convenience Commercial (C-1).	N/A	C-2, C-3, Planned Development Commercial
Neighborhood Commercial (NC) Small commercial businesses catering primarily to users from the surrounding area. Small-scale buildings may include convenience stores, gas stations, restaurants, professional offices, video rentals. Neighborhood Commercial is often located at the intersection of neighborhood and arterial streets to take advantage of higher traffic volumes.		C-1 or PD Commercial
Central Business District (CBD) Pedestrian-oriented commercial in the downtown core area. May include shops, restaurants, offices, banking, hotels.		C-4
Regional Commercial (RC) Shopping centers, big box stores and strip commercial centers that cater to, and are dependent upon, clientele from a regional service area.		C-3, PD Commercial
Industrial (I): Various light manufacturing and industrial uses. Areas should be away from residential developments and near major arterial roads, particularly I-15.	N/A	M-1, M-2

General Land Use Plan Designation/Purpose:	Density (DU/Acre)	Translates into these Zoning Districts:
Business-Research Park (BP): Well-landscaped business park accommodating needs of light manufacturing and various business offices. Outside storage of equipment and materials is not allowed in this area.	N/A	Specific zoning not yet established.

The Land Use Plan designates higher density housing throughout the community in locations that have adequate street and utility capacity as well as other amenities such as convenient commercial, parks, trails, etc. In addition, the General Land Use Plan encourages, and the Zoning Code allows, high density residential uses in Commercial districts. This will do much to bring residents and day/night presence in commercial areas, and also to provide living that allows elderly residents to remain self-sufficient even as they become less mobile.

Central City Area

The Central City area (Bluff Street to I-15 and 700 South to St. George Blvd.) contains many nice neighborhoods which are facing threats to their present quality and livability. The threats include:

1. Older housing units, many of which are in some stage of disrepair;
2. High percentage of housing units used as rentals. A Downtown Neighborhood Committee survey shows half of all residential units are rentals.
3. A relatively high number of zoning violations for such things as: excessive occupancy of dwellings, excessive weeds, and inoperable vehicles stored on residential lots;
4. Increase in number of group homes;
5. Demand for additional college student housing (rentals);
6. Increased traffic as drivers seek alternatives to St. George Blvd.
7. A concentration of high density housing in many downtown neighborhoods.

The City supports efforts to preserve and enhance the quality of life in downtown neighborhoods.

Some possible actions that will promote downtown neighborhood quality include:

1. Discourage the conversion of single-family homes to college student housing (rentals) by downzoning certain areas near Dixie State College (500 East to 700 East and 400 South to 100 South) from R-2 to R-1.
2. Continue to enforce zoning limitations on the number of unrelated occupants in a dwelling, and also other zoning code provisions (i.e. junk cars, weeds, etc.)
3. Provide loan and/or grant programs for housing rehabilitation and/or purchase when federal funding through such programs as Community Development Block Grant (CDBG) becomes available to the City.
4. Establish and enforce minimum property standards which will help prevent blighted housing and neighborhood deterioration.

6.3.1 RESIDENTIAL LAND USE POLICIES:

1. The City will zone land consistent with the designation of these density ranges on the Land Use map. Property owners and developers should not assume an entitlement to the higher range of densities when assigning zoning. In determining the appropriate density (within the range shown on the Land Use Plan) the Planning Commission and City Council will take into account *how and where* density is proposed to be placed on the property (i.e. design and location of buildings) as well as compatibility with adjacent land uses.
2. The City supports efforts to preserve and enhance the quality of life in downtown neighborhoods.

6.4 AFFORDABLE HOUSING

The American Chamber of Commerce Researchers Association (ACCRA) national cost of living index measures living cost differences among urban areas. A score of 100 is equal to the national average. In the third quarter of 2000, the overall *cost of living* index for St. George was 96.4, or 4% below the national average.

Affordable housing needs are typically related to the Area Median Income (AMI). Affordable housing usually targets a range, such as 60% to 89% of the AMI. An AMI range for Washington County, and the respective mortgage capability is shown below:

% AMI	2 Person Income	Mortgage	4 Person Income	Mortgage
110%	36,781		45,780	
100%	33,438	94,500	41,800	119,000
80%	26,750	75,600	33,450	94,500
60%	20,062	56,700	25,080	71,400

To put this in perspective, following are several local salary levels:

	Entry Level		Average	
	Earnings	% of AMI	Earnings	% of AMI
Teacher	\$24,121	57.70	29,070	69.54
Police/Sheriff	\$23,088	55.23	29,120	69.66
Bank Teller	\$14,768	35.33	16,848	40.30
Construction Laborer	\$16,432	39.30	24,336	58.22

Unlike many Western cities, for many years St. George has had a reasonable supply of affordable housing for low and moderately-income persons. St. George is currently meeting affordable housing needs through a combination of normal market demand through both public and private sector efforts. For example, in 2000 the following characterized home sales in the affordable category in St. George:

Location	Single-family		Condos/Townhouses	
	Average Price	Units Sold*	Average Price	Units Sold*
Dixie Downs	104,549	89	79,760	23
St. George City	127,296	57	100,236	141

Since these are average sales prices, this suggests that there are a reasonable number of affordable units in the St. George market.

Notwithstanding the current availability of lower cost homes, the affordability of housing in St. George is not assured into the future. The cost of housing will continue to rise due to the increasing cost of building materials, real estate, and necessary public infrastructure such as roads, water, sewer and power. It will be important for the City to continue to monitor, and take appropriate steps to assure, the affordability of housing.

6.4.1 AFFORDABLE HOUSING ISSUES

Many families seeking less expensive housing seek cheaper land in outlying areas and commute for employment. This results in increased traffic congestion, the need for more roads, greater energy consumption and an increase in air pollution. These impacts are significant, and will become more so.

An equally significant concern related to affordable housing is the stratification of the community. Most people begin their careers in entry-level positions with modest incomes. Many begin living on their own, married or single, in apartments or starter homes. If this type of housing is unavailable in St. George, it will rob the community of the vitality and commitment that young adults make to their community. Furthermore, whether young, middle aged, or older, there are many employees in St. George working for modest wages. Do we not have an obligation, so far as we can, to see that those who work in St. George have housing available to meet their needs?

One of the City's key goals is to promote an adequate supply of housing to meet the needs of all economic segments of the community. To encourage more affordable housing opportunities, the City has the following programs:

- *St. George Housing Authority (SGHA)*
The SGHA currently has 30 units of public housing for elderly low-income households. Through HUDs Section 8 program the SGHA provides 151 rental subsidy certificates for families, the elderly and handicapped households. Unfortunately, the waiting list for both programs is at least one to two years long.
- *Comprehensive Housing Affordability Strategy (CHAS)*
The CHAS program is intended to promote affordable housing opportunities for moderate, low, and very-low income families. The CHAS strategy includes a five-year and one-year action plan for planning and promoting safe and affordable housing for St. George, Washington County and the Five County area.

The General Plan Land Use map provides for development densities that allow a variety of housing types, including apartments, townhomes, condominiums, manufactured homes and detached single-family homes. This range in housing types and densities is designated in order to help meet the need for affordable housing.

6.4.2 AFFORDABLE HOUSING POLICIES:

1. The City encourages a diversity in housing types and cost ranges, including those that will permit persons of low and moderate incomes to locate in St. George.
2. The City will continue to use available federal and state housing programs to assist in the production of affordable housing for low and moderate-income households.
3. The City will work with the SGHA and other affordable housing agencies to carefully

document and monitor the availability of affordable housing in St. George.

4. The City will continue to provide locations for higher density (affordable) housing, preferably scattered throughout the community and within each development area, avoiding 'enclaves' of affordable housing.

6.5 COMMERCIAL LAND USES

6.5.1 MAJOR COMMERCIAL DEVELOPMENT

The Downtown is St. George's original commercial center. It was the center for retail stores, offices, lodging and government. The original, compact downtown gradually expanded east and west in strip development fashion along St. George Boulevard, a State highway and the major thoroughfare. As St. George grew, other commercial centers developed. Today, there are nine primary commercial areas in St. George:

1. Downtown
2. Sunset/Dixie Downs
3. Phoenix Plaza
4. Sunset Corners
5. Holiday Square
6. K-Mart/Albertsons
7. Factory Outlet Stores
8. Red Cliffs Mall
9. Bloomington Courtyard/Wal Mart

With the exception of the Red Cliffs Mall, these centers are generally arranged as auto-oriented development centers (stores arranged around a parking lot). The Red Cliffs Mall is an interior shopping mall surrounded by parking. Two additional centers are currently proposed:

1. Pine View
2. Sunland Drive

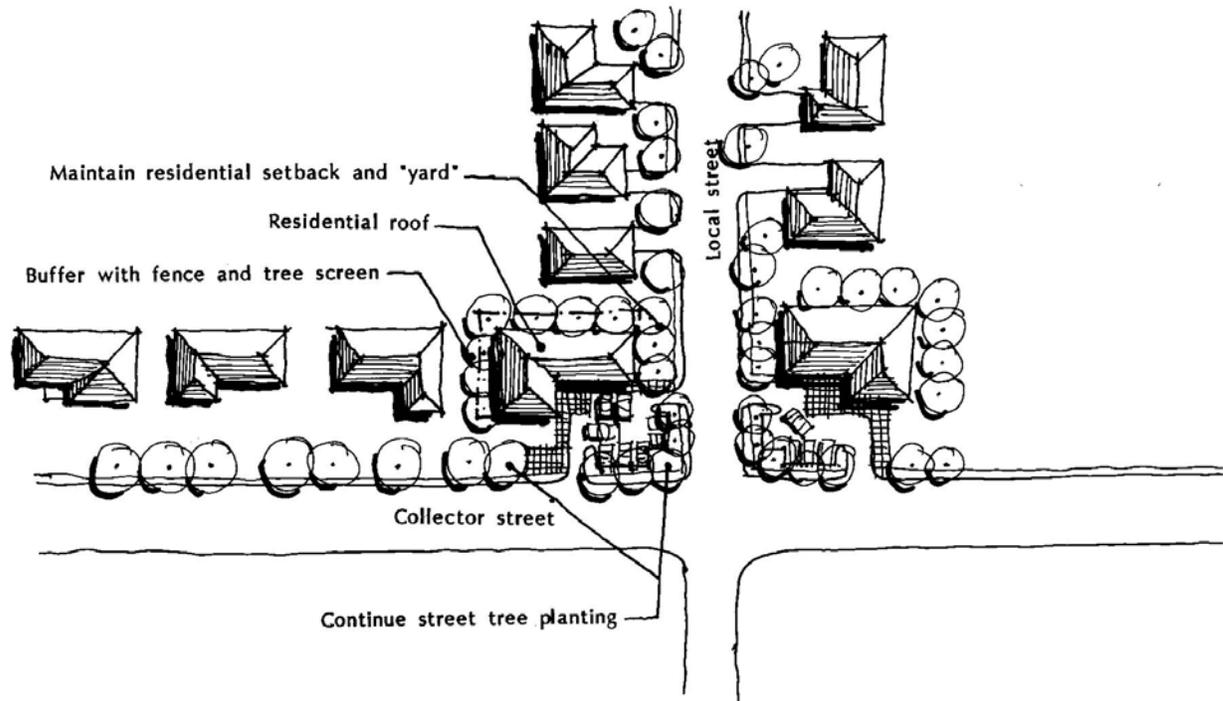


Figure 6-4: A hypothetical neighborhood center that blends well with adjacent residences.

6.5.2 “BIG BOX” RETAIL

A relatively recent retailing phenomenon is the emergence of “big box” retail stores such as Costco, Super Target, Lowes and Home Depot. These large stores (150,000 to 200,000 square feet) are often housed in windowless buildings (hence the term “big box”) surrounded by parking. Occasionally they are attached to, or near, other stores in a commercial center.

The primary appeal of big box retail stores is discounted pricing due to large purchasing and volume sales. While they often bring a significant tax revenue to a community, they also tend to place heavy competitive pressure on smaller stores.

The St. George/Washington City area has recently attracted a number of big box stores: Costco, Lowes, two Super WalMarts, Target and Home Depot. Collectively, they are a new, significant source of competition for existing retail stores and centers in St. George. Big box stores may well force existing stores and even major commercial areas to evaluate their competitive niche and seek

ways to distinguish themselves in the regional market.

The City has had a reasonable success in working with big box developers to create a facility that blends with its setting, through such things as landscaping in parking lots, and earth-tone building colors.

6.5.3 NEIGHBORHOOD COMMERCIAL CENTERS

Small neighborhood commercial centers such as at Green Valley (and Bloomington Courtyard prior to WalMart) are desirable to provide "convenience" commercial services within sub- areas of the City and thereby reduce the need for cross-town traffic for convenience items.

Within existing residential areas of the City, there are small, isolated vacant sites that are less desirable for residences (such as at busy intersections) that might be suitable for individual commercial or business establishments. These potential sites are too small and numerous to designate on the Land Use map and therefore need to be individually evaluated on a case-by-case

basis. The commercial or business buildings should be in scale with adjacent residential buildings (one or two stories, pitched roofs) and should be well-landscaped and fenced so as not to intrude into the neighborhood.



Figure 6-5: Green Valley Neighborhood Center

6.5.4 SOUTH BLOCK COMMERCIAL OPPORTUNITIES

The South Block, with no existing development, represents an opportunity to re-evaluate current land use patterns and to establish new land use relationships that bring about ‘livable’ communities that are more efficient, less auto-dependent, and that re-establish traditional living patterns. With regard to commercial development this provides an opportunity for a greater mix of uses—such as combining commercial, office and residential into neighborhood centers with apartments or offices above stores that line traditional sidewalks. These neighborhood centers and small downtowns can easily combine automobile convenience with close proximity to residences and result in walkable, self sufficient neighborhoods that provide convenience goods and entertainment for a wide range of family types.

6.5.5 COMMERCIAL LAND USE POLICIES:

1. Convenience commercial centers should be encouraged at appropriate locations in residential areas to increase convenience and reduce the need for cross-town travel. Small commercial buildings may be considered on a

case-by-case basis if the use and building are compatible with the neighborhood.

2. Along collector streets, strip commercial development (stores separated from the street by parking lots) should be avoided. The City will encourage commercial development in clusters or mixed-use centers to minimize the proliferation of strip development.
3. Commercial and business development along I-15 should have a pleasing appearance from the freeway. Highway facades should have finish materials similar to building fronts and attractive landscaping.
4. Major employment centers and other large traffic generators should locate near major collector or arterial roads.
5. Commercial areas in new development are encouraged to incorporate a mix of uses, including residential and office, in traditional (‘new urban’) development patterns.

6.6 BUSINESS LAND USES

St. George's attractiveness for business development is growing. The climate, natural setting and livability of the community make it an appealing location for employees. Its proximity to Las Vegas (two hours drive) and air service to Salt Lake City have greatly increased its convenience for business.

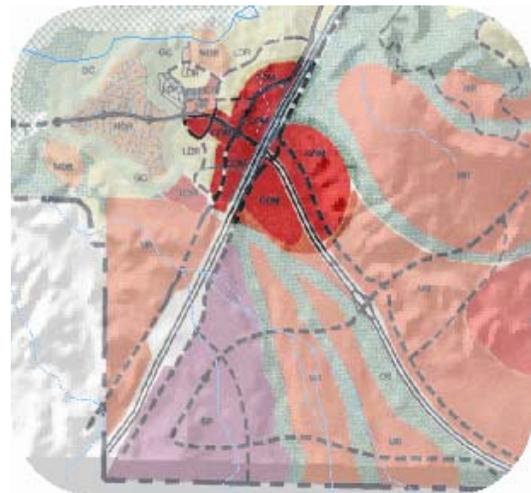


Figure 6-6: Proposed Port of Entry Commercial and Business Park

At the same time, St. George and Washington County have an extremely low wage rate, relative to both the State of Utah and the US. In 1999, the average monthly wage for non-agricultural employment in Washington County was \$1,776 compared to \$2,291 for the State. In 1999, Washington County averaged 63% of US wage rates, while the State of Utah averaged 85% of the national average. In 1999, national average non-farm monthly wage was \$2,776.²

It is an important goal of the City to attract upscale employment opportunities to the St. George area.

A business park or corporate center is proposed for the Port of Entry at the future Southern Corridor interchange on south I-15 (see Land Use element). This business park is envisioned as an attractive setting for office, research, or indoor-manufacturing operations in a campus-like setting.

6.6.1 BUSINESS LAND USE POLICIES:

1. The city shall encourage and help attract business development that will provide higher-than-prevailing wage rates.

6.7 LIGHT INDUSTRIAL LAND USES

Future light industrial areas designated in the city are Millcreek Industrial Park and adjoining land to the north, and the Ft. Pierce Industrial Park and adjoining area to the south. The latter area is located approximately one mile south of Bloomington Hills and along River Road. This area is buffered from other land uses by the hill to the north, the Ft. Pierce Wash to the east, the White Dome open space area to the south the Price City hills to the west. Some light industrial area is also envisioned near the proposed new airport southeast of Little Valley.



Figure 6-7: Eola facility in the Ft. Pierce Industrial Park. Adjacent is the site for Blue Bunny Ice Cream.

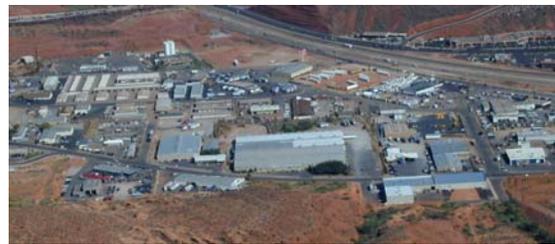


Figure 6-8: The old St. George industrial area adjacent to I-15.

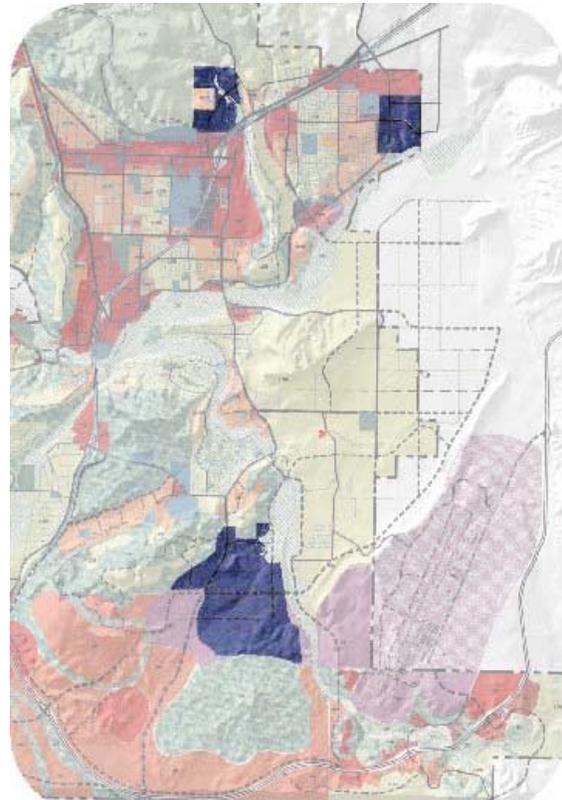
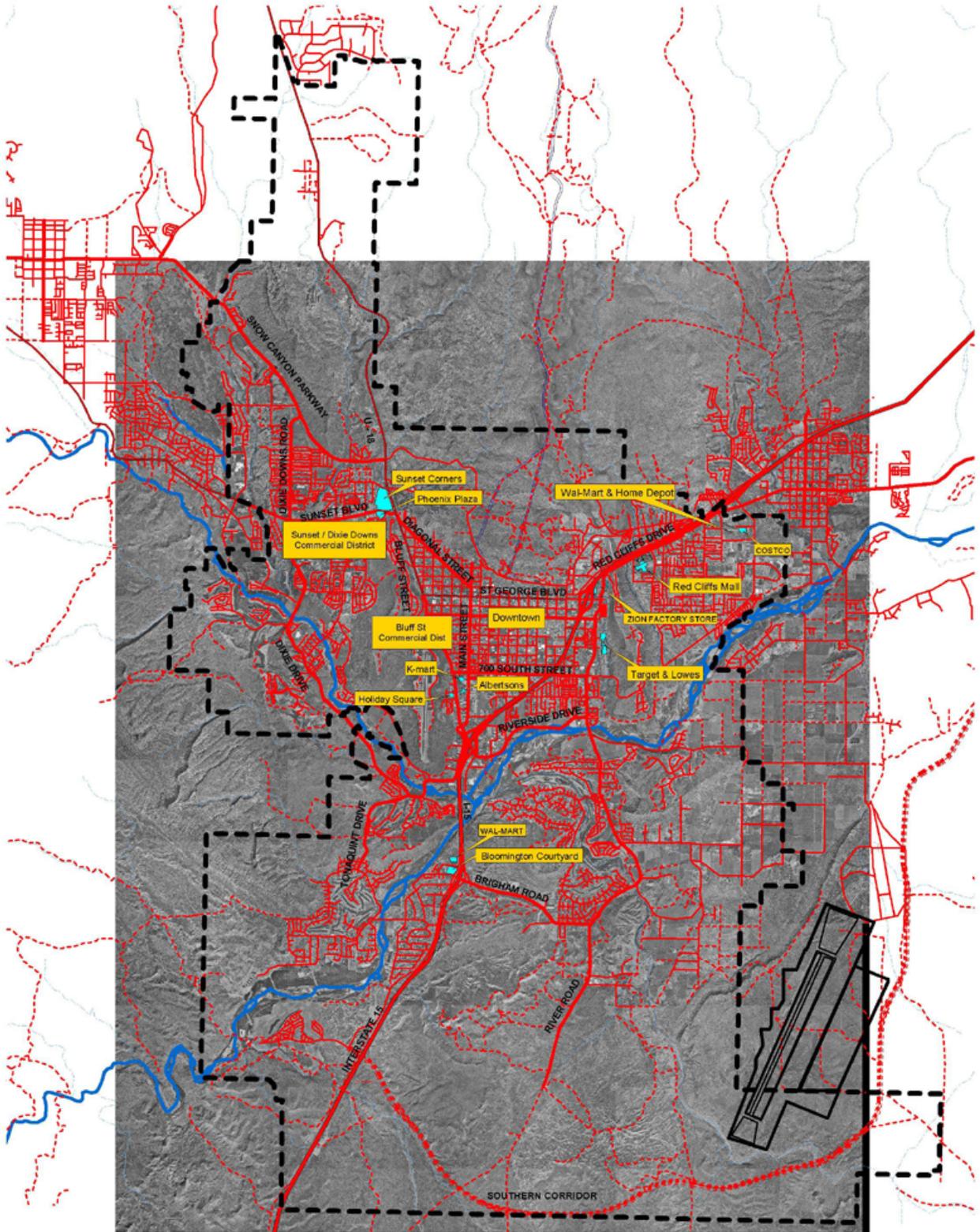


Figure 6-9: Industrial Areas in St. George

² Wage Information Source: Utah Dept. of Workforce Services



COMMERICAL AND BIG BOX RETAIL AREAS



6.7.1 LIGHT INDUSTRIAL LAND USES POLICIES

1. Industrial development should not be located in areas, which would diminish the desirability of existing and planned non-industrial areas. That is, they should be separated from residential uses by either a natural, physical buffer or a buffer of land uses that make a gradual transition from one type to the next.
2. Industrial development requiring large outdoor storage yards or outdoor work areas shall be visually buffered from major collector or arterial roads and residential areas.

6.8 AGRICULTURAL LAND USES

Agricultural land is a non-renewable resource. Once public and private decisions are made to convert agricultural land to non-agricultural uses, the resource is almost always irretrievably lost. Furthermore, the continued productivity of St. George's agricultural land is dependent on retaining the water rights with the land.

Agricultural land has two public benefits: 1) self sufficiency and cost advantages of local production, and 2) preservation of open space and aesthetic values associated with the rural lifestyle that has played an important role in the region's heritage.



Figure 6-10: The "Washington Fields" agricultural area.

The primary productive agricultural soils in the vicinity of St. George are located in the areas known as Washington Fields and Little Valley. The primary crop has traditionally been alfalfa for livestock feed. It is the intent of the following policies to discourage the conversion of viable agricultural lands to urban uses, and to provide mechanisms and incentives to preserve agricultural lands and opportunities for a rural lifestyle. The existing farmlands in the Washington Fields and portions of the Little Valley area are recommended to remain very low density agricultural areas (less than one dwelling unit/acre). Roads and other infrastructure in these areas are planned to retain a rural setting. A portion of the Little Valley area is recommended as a transition zone with a slightly higher residential density (up to 2 units/acre). This density will allow room to pasture large animals, yet still provide a slightly higher residential density than the Washington Fields area.

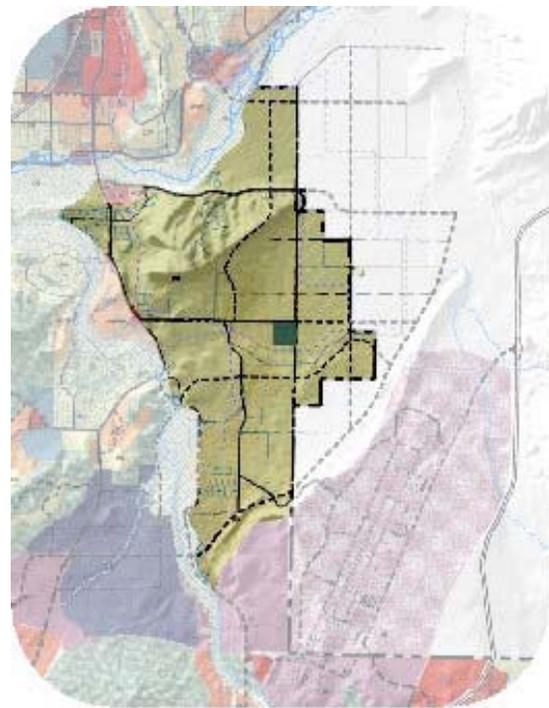


Figure 6-11: The agricultural areas in Little Valley and the Washington Fields.

6.8.1 AGRICULTURAL LAND USE POLICIES

1. Productive agricultural land is a limited resource of both environmental and economic value and should be conserved and preserved. Preservation and enhancement of a rural lifestyle is an important component of the cultural, social and aesthetic well-being of the region.
2. The City encourages land use/ development approaches that preserve areas of agriculturally productive land.
3. Agricultural uses shall be encouraged in the Little Valley and Washington Fields areas. Urban types of development (with curbs, gutters, sidewalks and lots less than 40,000 sq. ft.) shall be discouraged in these areas.
4. The City shall discourage the conversion of agricultural water to urban uses except where the proposed use would not adversely affect productive agricultural land and is otherwise consistent with the City General Plan.

6.9 PARKS AND RECREATION

Parks and Recreation are important aspects of a healthy community. Recreation facilities, programming and events are also important direct and indirect economic development tools. Indirectly, they help attract people and businesses to a community. Directly, recreation events can bring important sources of revenue, and recognition, to a community. In St. George, events such as the St. George Marathon, World Senior Games, state baseball tournaments and softball tournaments have a significant impact on the City economy.

The size and distribution of Parks also integrally affect, and needs to be coordinated with the other land uses in the City.

In 1994, the Leisure Services Department completed a Parks Master Plan that guides the acquisition and development of park facilities.

Based on recommendations in the Parks Master Plan, St. George has established a target of six acres of developed parkland per 1,000 residents (also known as a Level-of-service, or LOS). At this ratio of 6 acres per 1,000 population LOS, for today's population of approximately 50,000, the City should have 300 acres of developed park land.

The City has approximately 284 acres of developed park land. This equates to an actual LOS of 5.1 (acres of developed park per 1,000 population). This LOS was achieved to a significant degree by a 1996 voter-approved \$18 million Recreation Bond for the development and construction of new park facilities. Using both the bond proceeds and money available from park impact fees, 120 acres of new park lands were added.

Also aided by the 1996 Bond Issue, and per the Parks Master Plan, the City has added:

13 picnic shelters	12 tennis courts
7 softball fields	9 volleyball courts
4 horseshoe pits	9 outdoor basketball cts
10 playgrounds	5 restrooms
1 amphitheater	1 covered pool
1 nature center	

To continue to meet the needs of a growing population and the City's LOS goals, additional park land needs to be acquired and developed. planning is needed to reassess our current facilities and develop guidelines for new acquisitions and construction.



Figure 6-12: St. George's Aquatic Center

6.9.1 PARK IMPACT FEES

A portion of the City’s needed future park land is met by requiring future developments to set aside park land (or pay fees in lieu of) in proportion to the demand created by that development's residents. As shown below, the City’s park impact fees only cover a portion of the total costs of a Neighborhood park.

Impact Fee revenue calculation for each 5-acre park:

Population per 5-acre park:	1,000
Persons/ home:	/ 3
<hr/>	
Homes per 5-acre park	330 homes
Impact Fee	x 1200/home
Revenue per 5-acre park:	\$400,000

Park development costs (for a 5 acre park):

Land cost: 5 acres x \$30,000/ac.:	\$150,000
Development cost: 5 acres x \$100,000/ac.:	<u>\$500,000</u>
Total	\$650,000
Impact fee revenue	\$400,000
<hr/>	
Net deficit per park	\$250,000

Park impact fees are usually most practical only for meeting *Neighborhood* park needs. Community parks and Special Use Parks usually serve more than one neighborhood and are most effectively developed by the City. The costs of these kinds of parks must be recaptured through taxes or special assessments.



Figure 6-13: Neighborhood soccer game

6.9.2 PARK PLANNING STANDARDS

To enable designating park needs in the General Land Use Plan, following is a general description of St. George’s two primary park types and their amenities.

Neighborhood Parks

Neighborhood parks are usually within walking distance from the population served.

Neighborhood parks usually include an interior trail which connects to the neighborhood served, a playground with an open play area, pavilion, minimal parking, basketball court and/or sand volleyball. Neighborhood parks usually have a much more intensive day -to-day use than community parks. These parks are generally funded by development impact fees.

Community Parks

Community parks are areas of diverse environmental quality. They may include areas suited for intense recreational facilities, such as athletic complexes or large swimming pools. There may be an area of natural quality for outdoor recreation such as walking, viewing, sitting or picnicking. There may exist any combination of the above, depending upon site suitability and community needs. A good example of a community park is Snow Park, Snow Park Ballfield Complex and adjacent City Pool complex. It should be understood that Community parks serve dual purposes, as these areas are also used as Neighborhood parks for surrounding neighborhoods.

6.9.3 PARKS AND RECREATION POLICIES

1. The City will update the Parks and Recreation Master Plan and use it as a guide for locating and prioritizing park development and land acquisition for parks.
2. *Level of Service.* The City shall maintain the current level of service for developed neighborhood parks of 5.4 park acres per 1,000 residents.

3. The City shall strive to raise the total developed park land level of service (including neighborhood and community parks) to 6 acres per 1,000 residents.
 4. The City shall adopt standards for other recreation amenities (swimming pools, tennis courts, etc.) as set forth in the Parks Master Plan, and implement them through general funds, grants, impact fees, and a general bond obligation.
 5. The City will create a linear park (or greenbelt) system to connect neighborhoods to parks, open spaces and other community facilities.
 6. The cost of community or other special use parks and their amenities shall be equitably shared by all residents.
 7. New development shall provide neighborhood park facilities or impact fees-in-lieu to meet the demand created by the residents of the development (demand as defined in LOS standards of the Parks Master Plan).
 8. All residents of the City should have a neighborhood or pocket park within ½ mile walking distance.
- scenic areas and views, including the steep mesas and hills that frame the city, such as:
 - the west and east Black Ridges
 - the Red Hill north of St. George
 - portions of Webb and Schmutz Hills
 - Bloomington Ridges
 - areas with natural hazards (e.g. steep slopes, geologic hazards, floodplains), such as:
 - the floodplains of the Virgin and Santa Clara rivers
 - the White Dome and gypsum hills area south of Bloomington³
 - wetland areas
 - major dry washes, including Halfway, Ft. Pierce, Middleton, Sand Hollow, City Creek and Bloomington.
 - significant ecological habitats, such as: the Desert Tortoise Wildlife Management Area north of St. George (including most of Paradise Canyon and adjacent land to the east and west)
 - land that separates communities and keeps them from growing together.

Greenbelt and open space land can also be used for passive recreation and trails connecting significant facilities (parks, schools, commercial areas) and to

6.10 OPEN SPACE

In its broadest sense, open space is land that is not used for buildings or structures. It is a respite from development. Open space is farmland, mountains, river bottoms and mesa top vistas. It may also be parks and even cemeteries, golf courses and tree-lined streets. Although St. George is surrounded by vast areas of open space, permanent, accessible open space *within* the community is equally important to the citizens' quality of life. Open space must not be viewed merely as land left over after development, or land waiting to be developed. It is an essential element of the character and livability of a city.

Areas within and around the community that are desirable to be preserved as permanent open space include:

- existing and future park sites,



Figure 6-14: There are still close-in parcels of farmland and floodplain that could become valuable open space for future generations.

³ Although most of this land is owned by the State under School Trust Land and is intended for sale and development, the White Dome soil conditions will likely preclude its development.

provide residents with access to natural resources. For example, a city-wide greenway system along the Virgin and Santa Clara Rivers could serve as the unifying element of an open space network and assure public accessibility.

In addition to their intrinsic values, open spaces can also be connected to form a continuous passive recreation opportunity for the community. A growing number of communities have discovered the value of greenway systems, both as scenic trails and connections between other recreation facilities.

There are a variety of techniques, which may be used to help preserve open space. They include:

1. Zoning
2. Acquisition
3. Conservation Easements
4. Development Clustering and/or Transfer of Development Rights (TDR)

There are a number of entities in the St. George area that are, or can be, engaged in the preservation of Open Space. They include:

- ❑ Virgin River Land Preservation Association
- ❑ Bureau of Land Management
- ❑ Utah School and Institutional Trust Lands
- ❑ Washington County Water Conservancy District
- ❑ Utah State Parks
- ❑ St. George City
- ❑ Washington City
- ❑ Santa Clara City

The most effective way to coordinate this many entities is with an overall plan and strategy. An Open Space plan will also help focus the City's efforts and assure that public resources are preserved in the most cost-effective way possible.

6.10.1 OPEN SPACE POLICIES

1. The City shall actively pursue the preservation of significant open space through zoning,

conservation easements, acquisition, clustering, transfer of development rights (TDR's), supporting land conservancies (such as the Virgin River Land Preservation Association), and other land preservation techniques.

2. Land designated as Open Space on the Land Use map is intended to be preserved permanently free from development and left in a natural state and/or used for recreational purposes such as parks, golf courses and pedestrian/bicycle trails.

6.11 BIKEWAYS

Bicycle riding is both recreation and transportation. Bike route planning should consider the needs of both recreational riders and commuters. As a retirement and tourist community, St. George needs a well-planned and functional bikeways system as part of its community development plan.

There are three basic types of bikeway facilities in St. George:

➤ Shared Roadway

Legally, bicycles are classified as vehicles and may be ridden on most public roads in Utah. Bicycle use of roadways is common on low-volume local city streets and rural roads. Bicycle commuters (people who use bicycles as a primary means of transportation) often prefer the convenience of using any street or road to reach their destination.

On a shared roadway bicycles must emulate vehicle drivers (i.e. follow the rules of the road). Where bike travel is significant, shared roadways are often signed to remind drivers that the road/street is a bike route and that bicyclists have equal access rights.

➤ Bike Lane

Many communities stripe bike lanes along the sides of designated roads or streets to provide some separation from cars, and to create a more

visible encouragement of bicycle use. Even with striped bike lanes bicyclists must obey the rules of the road (e.g. travel in the same direction as the adjacent traffic). Typically, bike lane striping is discontinued at intersections to alert bicyclists to be aware of, and merge with, vehicular traffic; and to allow bicyclists to make proper turning movements (e.g. turning left from the inside traffic lane). Bike lanes are typically a compromise between shared use roadways and bike paths.

➤ **Bike Path**

Bike/recreation paths are physically separated from vehicular traffic ways and are usually two-way facilities. Bike paths are normally preferred for small children and recreational/tourist use, including walking, jogging and in-line skating. Major advantages of off road bike paths include safety from vehicle conflicts, lack of noise and the ability to be located in scenic settings.

The City has greatly increased pedestrian/bicycle paths throughout the community. Over 21 miles of trails currently exist in the park system, almost 13 miles of which have been constructed in the last 5 years. By the year 2002, the City plans to have over 30 miles of interconnected trails for both



Figure 6-15: *Virgin River bike path*

leisure and transportation.

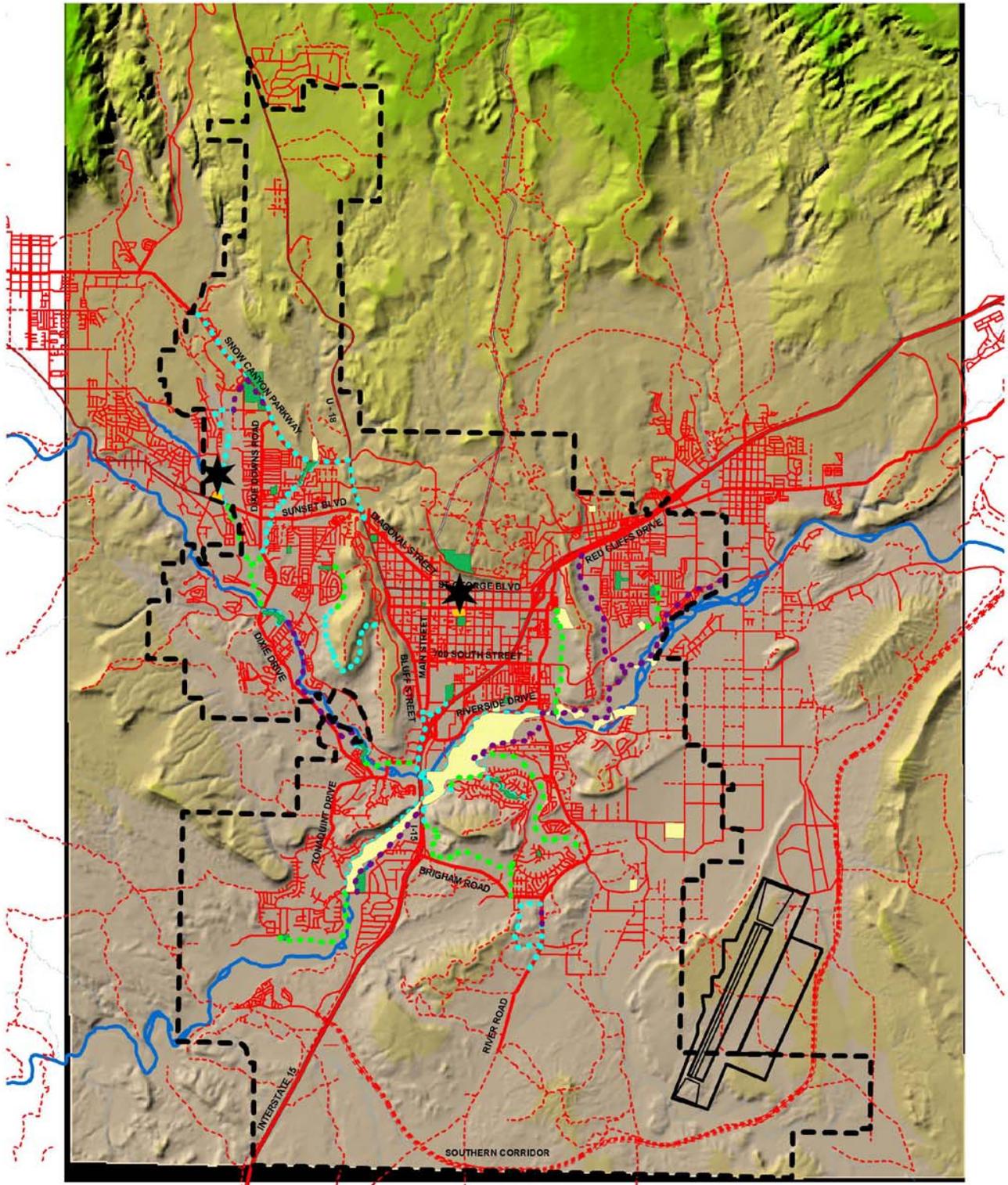
Bike/recreation paths provide access to scenic areas such as the Virgin River Parkway and other areas (shown on the Bikeway Map). With relatively low levels of use, bicycles can safely share the

pathway with pedestrian users. Because most bike path accidents occur at intersections with vehicular traffic, connecting points to roadways should be carefully designed.

Bikeway facilities fall under two jurisdictions: Transportation Department manages bike lanes, and the Parks and Recreation Department designs and manages bike paths. Bikeway facilities are a valuable amenity to both guests and residents of St. George. Private development of bike and recreational paths should be encouraged. Care must be given to assuring that all paths are safe and eventually tie into a comprehensive, City-wide system.

6.11.1 BIKEWAY POLICIES

1. The City will implement a bikeway system that integrates and interconnects pedestrian paths and on-street bike lanes, that will connect major destinations (shopping, schools) with parks and open space corridors.
2. The City will assure that all new development provides either off-street bike/pedestrian paths, or detached sidewalks, or both, and shall encourage such paths to be designed and located to tie into a Citywide system.
3. The City will implement elements of the Bikeway Master Plan as funding is available.
4. The City will connect on-street bike lanes to the bikeway system.
5. Bike/recreation paths will be included, in all greenway corridors wherever physically and environmentally possible.
6. Bike/recreation paths should take advantage of street and utility rights-of-way when available. The City will work with other land agencies such as irrigation companies, utility providers, the County and State, to obtain access for trails.
7. The City shall aggressively pursue alternative funding sources (private, County, State, Federal) for implementation of the Bikeway Master Plan.



PARKS, OPEN SPACE AND TRAILS



6.12 TRANSPORTATION

The Transportation element of the General Plan addresses decision-making related to the transportation of people, goods and services in the St. George region. The primary objective is to develop and maintain safe transportation systems which meet the public's travel needs. The City of St. George's transportation systems include roadways, public transportation, sidewalks, bike lanes and the airport.

6.12.1 ROAD MASTER PLAN

The roadway system consists of a hierarchy of street types: major and minor arterials, major and minor collectors, and local streets. To guide the installation of new roads and improvements to existing roads, the City has adopted a Road Master Plan that designates both alignments and types for St. George's major roadways (future local streets are not necessarily specified) that the City anticipates will be required in the future.

The Road Master Plan guides the City's own capital improvements planning, as well as that of private development. In accordance with the Road Master Plan, the City can:

- deny development that would preclude proposed roads;
- require developers to locate internal streets so they are consistent with the Road Master Plan;
- require developers to construct new roads, and make improvements to existing roads, if justified by the anticipated traffic impacts of the proposed development.

The Road Master Plan is coordinated with and reinforces the overall City General Land Use Plan to assure that roads provide necessary traffic capacity consistent with the land uses that will generate the traffic. For illustrative purposes the road system shown in the Land Use Plan is a generalization of the Road Master Plan. The Land Use Plan uses a slightly different graphic designation for road types, and several minor

alignments have been adjusted to respond to topography and land use considerations. *However, in all cases the Road Master Plan is the governing document regarding roadways in the City.*

6.12.2 TRAFFIC PLANNING AND LAND USE

Traffic planning is integrally related to land uses. For example, commercial areas typically generate higher traffic levels than residential areas. Likewise, without some mitigation, busy highways are less desirable for single family homes than low volume local streets. Traffic management strategies generally fall in two broad categories: *system* and *demand*.

Management of the traffic system

System strategies are typically low-cost physical actions intended to enhance the mobility and general efficiency of the existing highway system. Examples of System strategies related to Land Use planning include:

- managing the location of driveways, sharing of driveways, frontage roads, etc. to minimize disruptions in traffic flow.
- removal of on-street parking for major thoroughfares
- improved circulation (increased connections, reductions in cul-de-sacs and single-entry loops)

These strategies are related to Land Use planning in that they begin to dictate the design of streets, their attractiveness as places to live, and the relationship of homes and offices to streets (e.g., removal of on-street parking creates a need for alleys to serve either homes or businesses).

Management of traffic demand

Demand management strategies involve actions to influence people to make less, or more efficient, demand on the traffic system. These strategies generally include techniques to

1. make more efficient use of the existing road space (one-way streets, special lanes for high occupancy vehicles, etc.);
2. reduce auto usage in congested areas or time periods;
3. Limit housing density in congested areas, i.e. areas without adequate traffic capacity.

These strategies impact Land Use planning in that they affect the width of road rights-of-way, and they generally attempt to increase transit ridership through improved transit service and efficiency. Experience has shown that efficiency of transit is directly related to the density of the area being served (higher density results in higher efficiency).

6.12.3 ROADWAY/LAND USE POLICIES

1. The City will encourage traffic *demand management* strategies to reduce traffic congestion and air pollution, and increase energy conservation.
2. New developments will be required to improve intersections on collector and arterial road intersections to maintain not less than Level-of-Service “D” (including less than 40 seconds average wait at an intersection) during peak hours.
3. Traffic analysis for development approval shall be based upon a traffic study in accordance with traffic engineering principles accepted by the City.
4. Developments may be required to mitigate off-site impacts caused by development. (i.e., intersection and lane improvements)
5. Limit the use of private streets where public circulation and connectivity will be impaired.

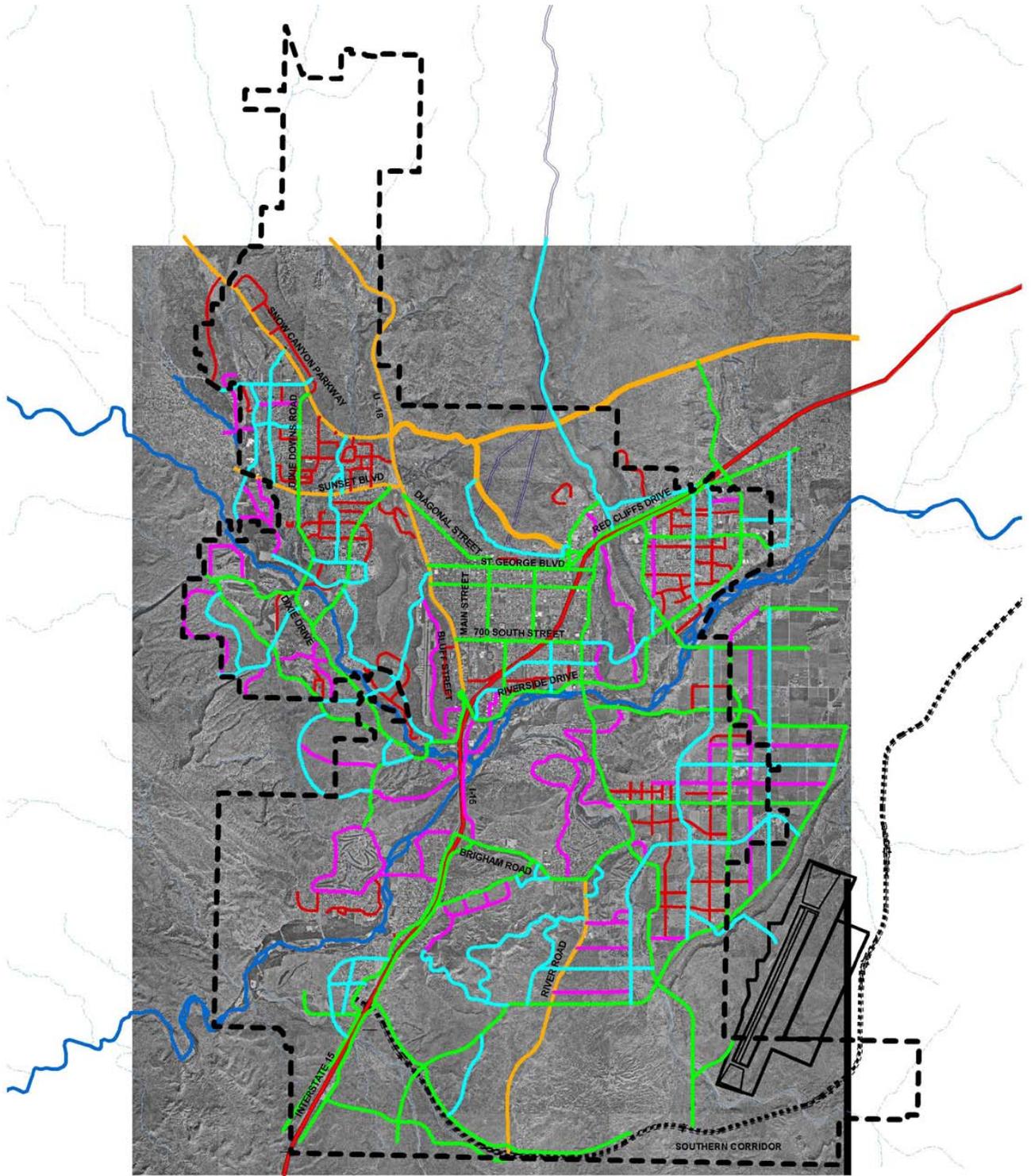
6.13 STREET PATTERNS

St. George’s original street design followed the pattern of other western Mormon communities: wide streets in a rectangular grid pattern. In the early 1900’s, city planning philosophies in the U.S. moved away from the strict geometry of the historical grid toward a ‘modernist’ vision of private streets, cul-de-sacs, and wide, curvilinear

streets, connected to fast, limited-access arterials. We now refer to this pattern as suburbia. Bloomington, Bloomington Hills, Green Valley and many other developments around St. George are laid out in a ‘suburban’ cul-de-sac form.

In the suburban, cul-de-sac model, what has been gained and what has been lost? In recent years the suburban road pattern has given us unexpected trade-offs. For example, in the suburban model, cul-de-sacs feed into collectors, which quickly lead to arterials. The privacy and low traffic volumes on cul-de-sacs are offset by the increased traffic impacts on the residents that front on the collector streets.

The response by developers has been to back the homes onto the collector streets, installing privacy walls as a way to block out the noise. This creates the need to construct another street on the front side of the house for access. The result is a quieter setting for the residents, but more expensive “double frontage” lots, and a depersonalization of the street for the public. St. George is replete with streets enclosed on both sides by privacy walls. Even with attractive landscaping, these streets have a negative appeal to walkers, and have no front porch “eyes on the street” that provides a natural deterrent to crime.



ROADS MASTER PLAN

-  Limited Access
-  50' ROW
-  Collector Road
-  Major Collector
-  Arterials
-  Interstate



Faced with these concerns, there is a growing appreciation for some of the previously overlooked merits of the traditional grid street pattern. For example in the grid system, there are multiple choices for routes to take to any given destination. One can start out in a variety of directions, and also have choices if a particular route becomes congested. The end result is a general equalization of traffic over the whole grid.

Also, collector roads can be made ‘livable’ through the traditional use of larger setbacks, medians, and alleys to allow parking from the rear.

6.13.1 STREET PATTERN POLICIES

1. The City’s overall objective is to provides access to land development while simultaneously preserving the flow of traffic on the surrounding road system. The City will strive to meet this objective through the following policies, which based upon examples of subdivision design that can be found in St. George.
2. The City will avoid cul-de-sacs unless required by physical constraints of the land (steep slopes). Rather, local streets will generally be arranged in a ‘modified’ grid to provide multiple routes through a neighborhood, and through the city, thereby diffusing traffic.
3. The City will avoid double frontage lots that result in rear, walled yards facing a public street. As an alternative to walled streets, the City strongly encourages (prefers) to avoid the necessity for sound walls by modifying the subdivision design to create a traditional parkway or “boulevard” condition, similar to those found in older St. George by one or more of the following:
 - a. Increasing the setback from the Collector, allowing houses to front on the Collector (with driveway access to each house via a rear drive or alley);
 - b. Fronting houses on streets perpendicular to collectors, facing side yards toward the collector streets;

- c. Creating landscape medians in the Collector, with shade trees to soften the impact of the street.
- d. Increased frontage to allow for circular drives.



Figure 6-16: 'Double frontage' lots lead to privacy walls and impersonal streets.

6.14 SOUTHERN CORRIDOR BELTWAY

Accelerated growth in Washington County is creating traffic congestion along major state and city routes, such as St. George Boulevard and Bluff Street, which are functioning at capacity levels (over 40,000 per day). A new airport is being planned near the Arizona border and industrial, residential and regional recreational development is rapidly expanding into this area. Based upon projected traffic demands, the existing Bloomington I-15 Interchange will function at failure service levels without the Southern Corridor beltway.

The Southern Corridor Beltway is a proposed 21 mile limited access State highway that will extend from I-15 near the Utah-Arizona border northeast to State Route 9 in Hurricane at approximately 3400 West. It is generally thought of as one phase of a future regional belt loop known as the Dixie Beltway that will serve the region. The beltway would provide an alternative link between the cities of Hurricane, Washington, St. George, Santa Clara and Ivins as well as areas of Washington County.

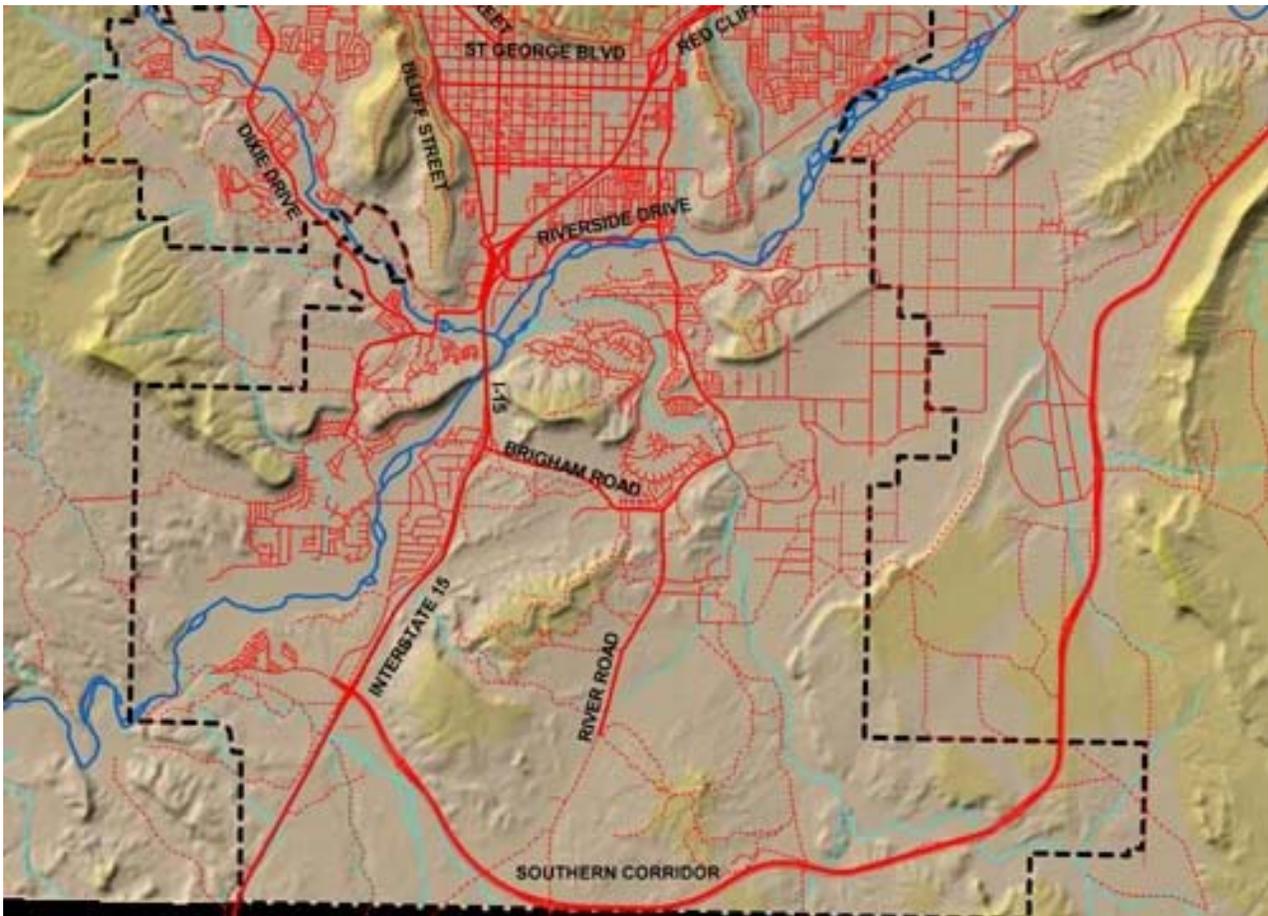


Figure 6-17: The Southern Corridor of St. George

The Southern Corridor Beltway has been in the planning process for more than 15 years. The highway is planned initially to be a two-lane facility, expandable to four lanes. This high-speed beltway is intended to provide an alternative route, with higher level of service, to meet projected traffic volumes. It has received significant public interest and support to accommodate growing traffic demands and access to the Southern quadrants of the region.

A feasibility study, completed for UDOT in 1996, supported the proposed alignment. Federal funds have also been allocated for construction of a new interchange at the west termini of the Southern Corridor on I-15 at the Atkinville Wash.

While there are many important reasons justifying the Southern Corridor Beltway (alternative to congested St. George Boulevard, access to the new

airport, and access to significant developable land in the South Block area), it also presents a significant land use challenge: how to prevent the new roadway from generating “leap frog” sprawl, with all its attendant inefficiencies and negative impacts?

History of many American cities has shown that wider, faster roads also make it easier to commute from longer distances, facilitating sprawl development with cars quickly filling up the increased roadway capacity. Salt Lake’s recent highway expansion program demonstrates how quickly new roadways can return to congestion. The Southern Corridor will make it all the more important that the City adopt, and enforce, careful policies regarding how the adjacent areas will be developed.

6.14.1 SOUTHERN CORRIDOR BELTWAY LAND USE POLICIES

1. The City will extend services and allow the development of land so as to bring about orderly and cost-effective development of the Southern Corridor and South Block area, with a balance between housing, employment and commercial development.

6.15 PUBLIC TRANSIT

Many of the unique aspects of the St. George area point to the need for increased public transit:

- As population grows and cars increase, the city's topographic constraints limit the location of roadways (forcing increased traffic onto restricted corridors such that traffic congestion is becoming a visible problem)
- A high elderly population with reduced ability to drive automobiles.

Preliminary estimates show that the demand for transit is currently approaching 500,000 annual transit trips per year. While this number of trips is only a small fraction of total trips in the region, even at this level transit could nevertheless provide an opportunity for many residents to become or remain employed and active in the community. Nevertheless, at least for the near future, transit must be recognized as only a small part of the overall strategy for traffic congestion relief.

6.15.1 TRANSIT OPTIONS

The City has a small bus system. While there appears to be very strong philosophical support for increased public transit, it is not clear whether the majority of residents would be willing to support increased public transit through local taxes. An extensive transit service that would attract broad usage through frequent, convenient service over a large area is likely beyond the initial financial means of the area. Therefore, for the near-term, transit ridership in the region will continue to be comprised of "transit captive" groups (for whom

cars are too expensive) as opposed to large numbers of "choice" riders.

So it appears most cost effective to build on the existing demand and phase in higher levels of transit service gradually as demand dictates.

Today, there are a number of special care facilities that provide transit throughout the area. This "on demand" service is generally not coordinated in the sense that different agencies may provide redundant service over similar routes and many agencies struggle to provide driver, vehicles, vehicle maintenance, and related functions at a small scale.

With the population of the St. George area now qualifying as an Urbanized Area, several funding opportunities, for both operating and capital costs, will become available to help grow a more extensive transit system. Operating costs of up to \$700,000 annually (with Service Routes) could be supported by a combination of federal transit assistance, limited fare box revenue, and some level of local taxpayer support. Capital costs for the purchase of vehicles and maintenance facilities will require greater subsidies. For regional efficiency, a transit district should be formed in conjunction with the formation of a Metropolitan Planning Organization.

6.15.2 PUBLIC TRANSIT POLICIES

1. The City supports compact development that reduces auto-dependence, such as locating housing in the downtown and in or adjacent to other commercial areas.
2. The City shall continue to assess the need and public support for public transportation systems.
3. The Road Master Plan and Land Use Plan will be coordinated to assure that adequate rights-of-way are reserved for a transit system that will meet St. George's future needs.

6.16 AIRPORT LAND USE

6.16.1 BACKGROUND

The St. George Municipal Airport has been a vital part of the national system of airports, as well as an integral component of the transportation infrastructure, which serves the City of St. George, Washington County and the region. This facility also serves as the City's front door, providing visitors with an important first impression of the community. The airport provides transportation facilities that are essential to employment, economic development and tourism.

However, the existing airport's capacity is limited by its mesa-top location that allows a runway length of 6,607 feet, with no options to extend the runway in the future. Therefore, the airport cannot accommodate the rapidly growing commercial service regional jet aircraft fleet and many aircraft within the larger general aviation business jet fleet. The existing commuter airline (i.e. SkyWest Airlines) must accept periodic passenger and/or cargo payload departure penalties (ranging from four to seven passengers when temperatures exceed 100°F).

Recent forecasts indicate a potential for significant expansion in commercial passenger activity if a replacement airport is built. The number of annual passenger enplanements (those purchasing tickets for St. George) was forecast to increase from approximately 32,910 in 1998 to approximately 191,900 in 2018. Annual aircraft operations (landings and takeoffs) at the airport were forecast to increase from approximately 46,193 in 1998 to near 79,220 in 2018, while based aircraft totals are expected to increase from 120 to approximately 178 for the same period.

The St. George City Council, therefore, has made the decision to build a replacement airport at the preferred site located southeast of St. George.

6.16.2 EXISTING FACILITIES

Existing airport facilities include a 10,789 sq. ft. terminal building with accommodations for commercial passenger service and car rental agencies. Federal Express opened cargo service operations in the southeast general aviation area in 1985. Dixie College has a hangar located on the west side of the airport to accommodate their aviation program.

General aviation facilities include T-hangars, fixed base operations and aprons for local and transient aircraft. A single access road to the airport, located west of St. George's central business district, connects to Bluff Street at the intersection with St. George Boulevard.

6.16.3 NEW AIRPORT LOCATION

A new airport location has been selected by the City, and approved by the FAA, near the abandoned Civil Aviation runway in the southeast quadrant of the City. To protect the health, safety and welfare of property or occupants in the vicinity of the future Replacement Airport, compatible land use planning is critical. This will avoid obstruction or incompatible uses, that effectively reduce the size of the area available for landing, takeoff and maneuvering of aircraft.

6.16.4 REPLACEMENT AIRPORT OPERATION ZONES

A St. George Replacement Airport Overlay Zone ("Airport Overlay Zone") has been established which is an overlay zone over the existing zoning districts shown on the official St. George City Zoning Map. A detailed land use plan is needed for this area.

The boundaries of the Airport Overlay Zone within the City of St. George are shown on the Land Use Plan. The Airport Overlay Zone includes the Airport Influence Area, the Flight Pattern Area, and the Approach Area, as follows:

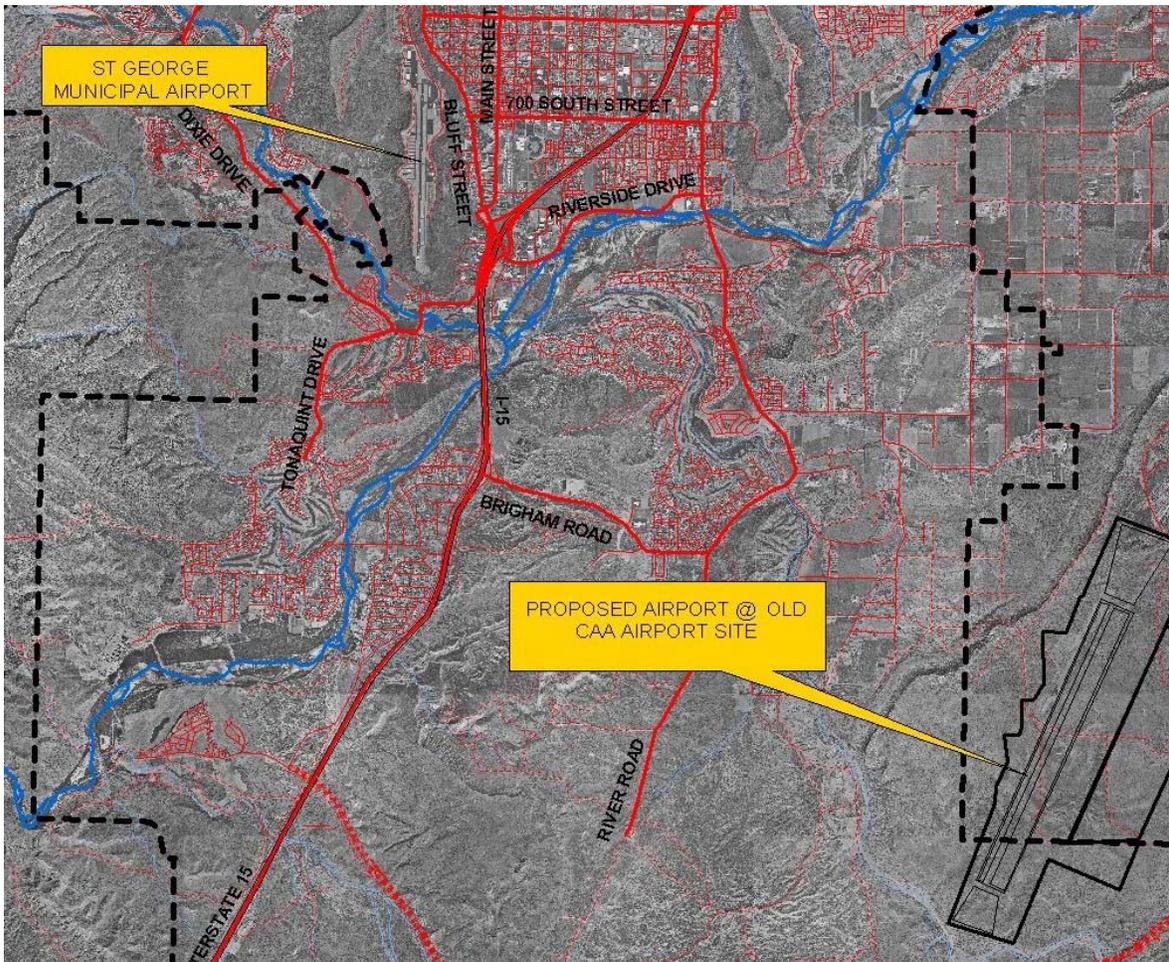


Figure 6-18: The current and new airport site and layout.

The *Airport Influence Area* is any area that is within eight thousand (8,000) feet of any proposed future runway.

⁴The *Flight Pattern Area* includes areas exposed to high levels of aircraft noise immediately surrounding the airport. Prohibited uses within this area include such things as residences, hospitals, libraries and other noise sensitive uses.

The *Approach Area* is that area within the direct approach to any proposed runway. It consists of rectangular-shaped areas extending 8,000 feet in

length from the ends of each runway. The Approach Area is exposed to very high levels of aircraft noise and safety hazards. Prohibited uses within this area include those of the flight pattern area plus uses involving public assembly such as theaters and convention centers.

Appropriate planning is required to minimize conflicts between land uses and airport operations, (including noise), risks to public safety, traffic congestion and incompatible land uses within the defined airport influence areas. Adequate land use planning for the land around the new airport also:

⁴ All proposed development in the Airport Influence Area requires an airport impact assessment to be performed by the developer and approved by the City of St. George, Public Works Department, prior to development to ensure that the proposed development will be compatible with airport uses.

- Prevent hazards to navigation by restricting the height of land uses in certain areas; and
- Provide public notice that certain areas may be affected by aircraft operations.

6.16.5 REDEVELOPMENT PLAN FOR THE EXISTING AIRPORT

The existing airport is centrally located on a plateau within the City of St. George. The view from the plateau to the east provides an excellent panorama of downtown St. George, the Redrocks and Pine Valley Mountain Range to the north and Zion National Park on the far eastern horizon. There are approximately 250 acres that are considered developable as defined by the St. George Hillside Ordinance.

The redevelopment plan for the current airport property is shown on the Land Use Plan. It proposes a mix of land uses including:

- Residential,
 - single family residences,
 - townhomes,
 - multi-family condominiums and
 - apartments
- Commercial,
 - highway commercial
 - retail commercial
 - businesses (office and professional)
- Administrative/professional,
- Light industry and/or corporate campus uses.

This land use concept provides a balance of jobs and housing, centrally located for the potential convenience of the adjacent residents. The highway commercial and retail commercial property will generate net tax revenue for the City in the future.

The existing roadway to the airport will not be adequate as the sole access in the future. Two additional major collector roads will be required, one from the south and one from the west. With these roadways in place, the development will have convenient access from Downtown St. George, from the south interchange of Interstate I-15 and from the developing areas to the west of downtown.

St. George City presently provides a modest amount of utility service to the airport, including water, wastewater and electricity. The existing utility lines are mere extensions from various parts of those developed areas of St. George and provide service to only the north half of the airport area. These utility services will not meet the potential of the proposed residential and commercial developments.

As part of the redevelopment plan, additional transmission water lines and wastewater outfall lines will need to be extended to the top of the plateau. This will adequately loop the City's water system through the proposed development.

The existing electrical supply system to the St. George Airport will be adequate for the planned development.

6.16.6 AIRPORT LAND USE POLICIES

1. The City will take appropriate steps to acquire and protect the land area necessary for operation of the new airport.
2. The City will prepare a detailed land use master plan and zoning to discourage incompatible land uses from encroaching into airport operations areas and to ensure that development will not create pressure for reductions in the intensity of services nor prohibit the expansion of service at the airport.
3. The City will promote sound economic land uses in the planning and development around the replacement airport.
4. Future redevelopment of the existing airport is expected to fund the cost of improvements to support that development.

6.17 UTILITIES AND LAND USE

6.17.1 WATER

Like most western cities, St. George's future growth is closely tied to the availability of water. Due to the low annual precipitation (average 8"/year) water is St. George's most critical natural resource. For future growth in this desert setting, the central question is always, "Will we have enough water?"

The *Culinary Water Resources and Water Distribution System Master Plan* completed by the City in July 1997 identified potential water resources and water development strategies for St. George. It addressed water supply from two perspectives: demand and supply.

6.17.2 PROJECTED WATER DEMAND

Assuming 4% annual growth, the City population is projected to be approximately 65,800 in 2007. With some water conservation the average per capita water demand is projected to be 290 gallons per capita per day (GPCD). The 2007 total culinary water demand is projected to be approximately 26,500 acre-feet (AF)/year.

Water demand does not occur uniformly throughout the year. Summer peak water demand is 3 to 4 times greater than a typical winter peak demand, even though the winter population is significantly higher than the summer population, giving a good indication of the portion of water use for irrigation and the water-intensive landscaping practices in much of St. George.

With reasonable conservation measures in place, water consumption beyond the year 2007 is projected to be approximately 260 GPCD. In the year 2010, the study projects the City's population to be approximately 70,000 persons, with an annual water demand of approximately 31,500 AF/year.

6.17.3 PROJECTED WATER SUPPLY

St. George currently obtains its underground culinary (drinking) water supply from:

- spring sources located in Pine Valley, about 18 miles northeast of the City;
- wells in the Gunlock area, about nine miles northwest of the City;
- wells in the Snow Canyon area, about nine miles north of the City;
- wells (only one producing) in the Mill Creek area, about four miles north of the City;
- the City Creek well, located approximately four miles north of the City; and
- the Virgin River, through the Quail Creek Water Treatment Plant.

Water flows from these sources to 17 storage tanks at various locations in the City. Water from the spring sources in Pine Valley and the Quail Creek Source are chlorinated.

The 1997 study concludes that the City's current water *supply* is adequate for the next decade. Beyond that, sources can be acquired to meet the City's needs for more than 30 years. The City's challenge will not be the availability of water, but rather the *production and delivery* of water: drilling the wells, building new reservoirs and installing the pumping/piping systems necessary to transport the water to St. George users.

6.17.4 IRRIGATION

Irrigation represents a significant component of water usage, as seen in the previous figure. Furthermore, irrigation demand varies greatly among various kinds of use and management approaches: from 1.6 AF/year per acre for public institutional properties to 10 AF/yr per acre for golf course properties.

Most irrigation water serving urbanized portions of the St. George Service Area comes from the City's culinary system. Undeveloped agricultural areas and golf course acreage are served by several City wells and/or open ditch irrigation systems.

In order to conserve well water (which doesn't need treatment) and water that has been treated for culinary uses (which is expensive), the City is taking steps to implement a separate, less costly system for piping "secondary" (less than fully treated) water that can be used for irrigation.

Washington County School District is investigating alternatives for meeting their future irrigation demands. Sources being considered include existing wells, other City-owned irrigation wells along the Santa Clara River and City Creek debris basin storage.

6.17.5 WATER CONSERVATION AND LAND USE

Significant water use reductions can be achieved in St. George through basic conservation measures. Experience has proven that the public can significantly reduce water consumption in emergencies (e.g. during a drought), but what is truly needed is a long-term conservation ethic. Benefits of reduced water use include:

- Avoiding, or lowering, costly water treatment plant expansions;
- reducing development costs for such things as new wells or dams;
- reduced wastewater flows
- reduced new facility construction costs;
- lower individual water bills.

In St. George City, the most significant water use reduction can come through landscaping practices more conducive with our desert climate. It is estimated that as much as 28 million gallons per day (MGD) are used for outdoor irrigation during the summer months. Two strategies for St. George are:

1. reducing the size of irrigated grass areas, and
2. increasing the use of low-water landscape materials (xeriscape).



Figure 6-19: An example of a xeriscape landscape in St. George

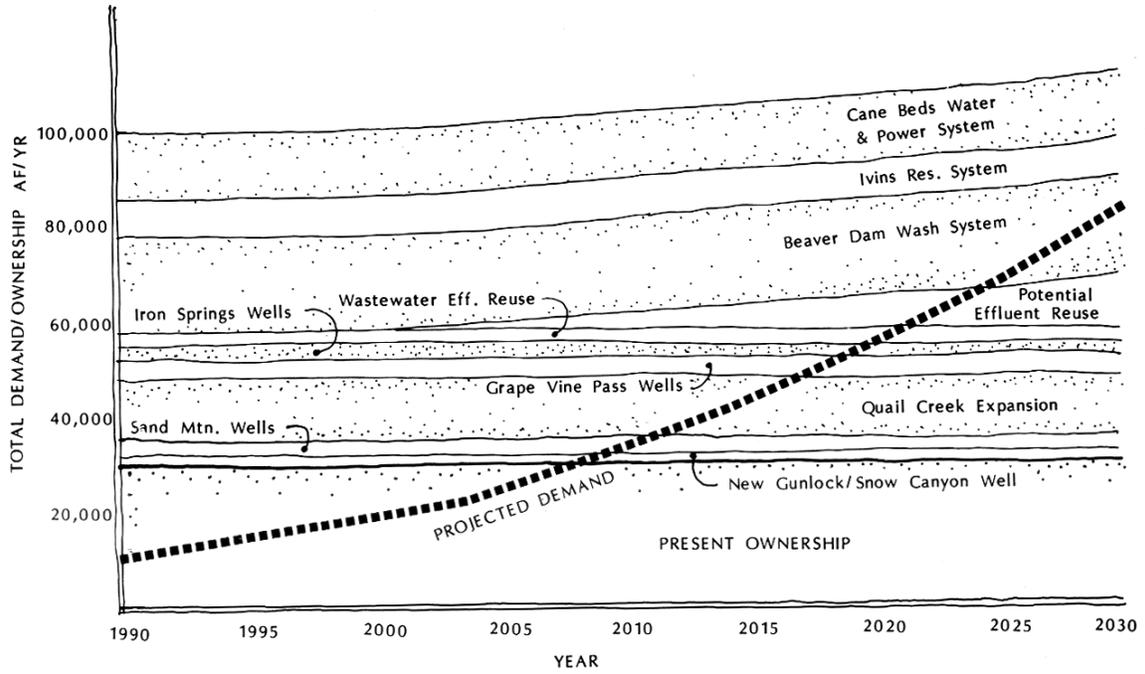


Figure 6-20: Culinary Water Projection – Demand vs. Ownership

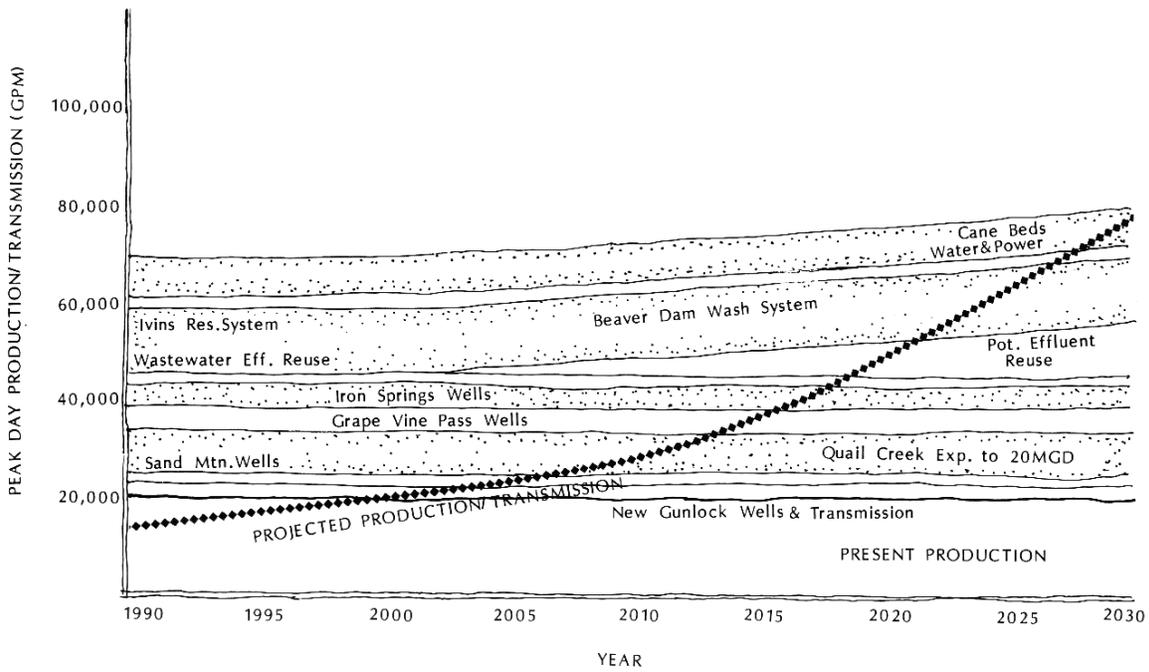


Figure 6-21: Culinary Water Projection – Supply vs. Transmission

6.17.6 WATER/LAND USE POLICIES

1. The City encourages the gradual reduction of per capita consumption of water from the current level of 360 gallons per capita per day to 290 gpcd by the year 2007. After 2007 the goal is to reach 260 gpcd.
2. Users of large amounts of water for landscaping and other exterior purposes are encouraged to use “secondary” irrigation water rather than culinary water.
3. The City shall adopt water conservation measures for its own facilities, including:
 - o xeriscape landscape design reduction in the amount of turf grass areas requiring irrigation
 - o installation of water saving plumbing fixtures
 - o use of secondary water for major irrigated areas
 - o use of irrigation control systems responsive to weather conditions, that reduce water runoff.
4. Irrigation Water associated with land to be developed in the City must be offered to the City at fair market value.
5. City Water facilities shall be buffered from adjacent land uses to mitigate potential impacts to/from lights, hazardous materials, spills and vandalism.

6.18 WASTEWATER AND LAND USE

The City of St. George built a 5.0 million gallon per day (MGD) oxidation ditch treatment plant in 1990. This facility, located south of Bloomington, serves the communities of St. George, Ivins, Santa Clara and Washington. In 1995, the treatment plant was expanded to 8.5 MGD. In order to respond to growth in the area, the treatment plant was again expanded to 17 MGD in the latter half of 1999. Based on current growth rates, it is projected that the treatment plant will meet the needs of the region until around 2011. All areas of

St. George are capable of being served by the public wastewater treatment plant.

6.18.1 WASTEWATER/LAND USE POLICIES

1. The permitted capacity of the treatment facility shall not be exceeded. Planning and foresight will be required to assure that sewer treatment capacity does not become an limitation to development.

6.19 ENERGY AND LAND USE

6.19.1 NATURAL GAS

Natural gas is provided to St. George and surrounding communities by Questar, Inc. In 2000, Questar’s St. George Service Center served more than 9,000 residential, commercial and industrial customers.

Natural gas prices in St. George are very competitive with other cities of its size in the country. More than half of Questar's supply comes from its own reserves, reducing the company's gas costs.

Depending on customer usage, Questar can provide either firm or intermittent services. Prices vary according to the type of service and level of usage. Questar plans to service all areas of St. George and will extend service lines to an area when an adequate customer base exists.

6.19.2 ELECTRICITY

St. George established its own electric system in 1942. The St. George electric system has a service area of approximately 45 square miles and includes approximately 380 miles of transmission and distribution lines.

St. George generates a small portion of the electric power and energy sold through its electric system and purchases the majority of its power from outside suppliers that have excess capacity.

During 1998, and 2000 the 14 MW diesel-generating facility was utilized to provide back-up for energy.

St. George City is a member of the Utah Association of Municipal Power Systems (UAMPS). UAMPS is a joint action agency providing power supply, transmission and resource scheduling operations for 35 municipal electric utilities. UAMPS members are billed according to their individual contractual obligations and hourly resource use.

Dixie-Escalante Rural Electric Association (REA)
Under a non-exclusive franchise with the City that is renewable every 20 years, the REA provides electric power to all areas within the City limits south of the Virgin River. This includes Bloomington, Bloomington Hills, Little Valley and the Washington Fields area. The REA's planning and operation are independent of the City.

6.19.3 ENERGY/LAND USE POLICIES

1. The City encourages land use practices, which conserve energy resources, such as compact development and solar access rights.
2. The City shall evaluate and adopt guidelines for energy conservation.
3. *Level of Service (LOS)* for all development shall permit the voltage distribution to all customers to be maintained between 90% and 110% of normal.
4. The Power Department will accept offers of land and construction funds for major improvements such as substations.
5. The city will continue to upgrade transmission capacity to meet projected demand.

6.20 SOLID WASTE DISPOSAL

The Washington County Solid Waste District handles the solid waste from the City of St. George. The District includes all unincorporated Washington County and all municipalities in the county except Hilldale.

The District has contracted the operation of the landfill and residential collections services to a private firm. In 1993, approximately 26,775 tons of solid waste (4.56 lbs per person per day) was hauled to the county landfill from the City of St. George.

The current 500-acre Washington County landfill, located east of Washington City, has been in service since 1978; it is estimated enough space remains for it to be used for another 20 years.

6.20.1 SOLID WASTE DISPOSAL POLICIES

1. The City supports the District's objective of reducing by up to 25% the amount of solid waste disposed in the County landfill.
2. The City will cooperate with the District's goals by implementing effective recycling measures within City departments.

6.21 FIRE PROTECTION AND LAND USE

The Insurance Service Organization, a national insurance rating service, rates communities on a scale of 1 to 10 (1 = best) for fire insurance purposes. St. George holds a rating of 5 (1992).

As of January 2001, the fire department consisted of 8 full-time personnel and a reserve force of 50. As the city grows the need for more full-time staff will be needed due to increased call volume and a greater response area.

The department has 6 fire stations with an additional station being planned for the northwest area of the city. The department is also planning 6 additional fire stations throughout the city along with fire station facilities planned at the new airport.

The department has 6 front line pumper trucks, 2 reserve pumpers, one 75-ft. ladder/pumper truck, 1 service/rescue squad and 4 brush trucks along with staff vehicles. The City's street width standards for local streets include considerations for fire

equipment access. A number of communities throughout the U. S. have concluded that wide streets also encourage speeding that may contribute to accidents and add additional unneeded lifecycle maintenance costs. It will be important for the City to find a balance between the competing needs for fire safety and traffic calming and adjust street standards as appropriate.

6.21.1 FIRE POLICIES

1. *Level of Service.* All development in the City should be within a mile and a half service area of a manned fire station, or otherwise meet levels-of-service that comply with the International Fire Code.
2. The City will accept proffers of land and buildings from developers in order to meet the above standard.
3. The City will balance the street width standards relative to fire safety accessibility, traffic calming and maintenance costs.

6.22 PUBLIC SCHOOLS AND LAND USE

6.22.1 K-12

Public Schools in grades K-12 are provided and administered by the Washington County School District. K-12 schools impact land use planning in several ways:

- Their capacity must keep pace with the City’s school-age population. As a result, new development usually creates the need to construct additional schools. A 50% projected increase in the city population by 2020 will generate the need for a significant number of additional schools.
- Since K-12 schools require anywhere from 5 to 15 acres, their location is a significant consideration in the planning of neighborhoods. (Large new developments are usually required to designate sites for new schools.)

- If the School District acquires sites beyond the current urban edge, the City typically extends roads and utilities to these sites, which encourages development to occur in an inefficient “leap frog” fashion.



Figure 6-22: Snow Canyon High School

- All of the above suggests a concerted need for cooperative long-range planning between the City and the School District. For example, it may be possible for the City to designate in advance land for new schools, and reserve them through the subdivision process, so that the school district need not purchase and develop them in advance of actual needs. This would not only reduce the cost of schools, but also allow schools to follow development rather than lead it.

6.22.2 PUBLIC SCHOOL LAND USE POLICIES

1. The City shall work with the School District to plan future school facilities and to better predict road and utility needs.
2. The City shall assist the School District in identifying and reserving land for school facilities so as to reduce the need for school acquisition and construction in advance of development (avoid contributing to “leap frog” development and sprawl).
3. To reduce the costs of both schools and parks the City will explore joint development of school sites for neighborhood parks, so long as public accessibility meets the neighborhood’s needs.
4. If the School District acquires sites beyond the current urban edge, the City should extend

roads and utilities to these sites, only when other development reached those sites incrementally - so as not to encourage development to occur in a “leap frog” fashion.

6.2.2.3 DIXIE STATE COLLEGE

Dixie State College is a State-supported college comprised of a two-year community college and a limited number of baccalaureate programs. In addition to providing general education opportunities for more than 7,200 students, the college also offers a diverse continuing education program for the adult and retirement population of St. George.

The Institute for Continued Learning utilizes retired professors who volunteer their time to teach classes for more than 500 senior citizens each semester. The Elder Hostel program provides instruction to out-of-state senior citizens every week of the year.

Besides contributing to the academic needs of the community, Dixie State College provides music and theater programs, the Dixie State College Celebrity Concert Series and the Southwest Symphony Orchestra season.

It is anticipated that Allied Health programs will be a major focus in Dixie's near future. These programs are intended to complement employment and health care needs for southern Utah.

The student population at Dixie College is expected to grow to about 8,170 students (4,810 full-time equivalents) by 2006, and to 14,430 (7,610 FTE) by 2021, approximately double the current enrollment. More student housing will be needed to accommodate the proposed future growth of the College.

The College provides only one on-campus dormitory and the majority of students are housed off-campus. Nor does the College plan to provide additional dormitory facilities in the future, instead leaving the provision of housing to the private rental market. Many rental apartment units are



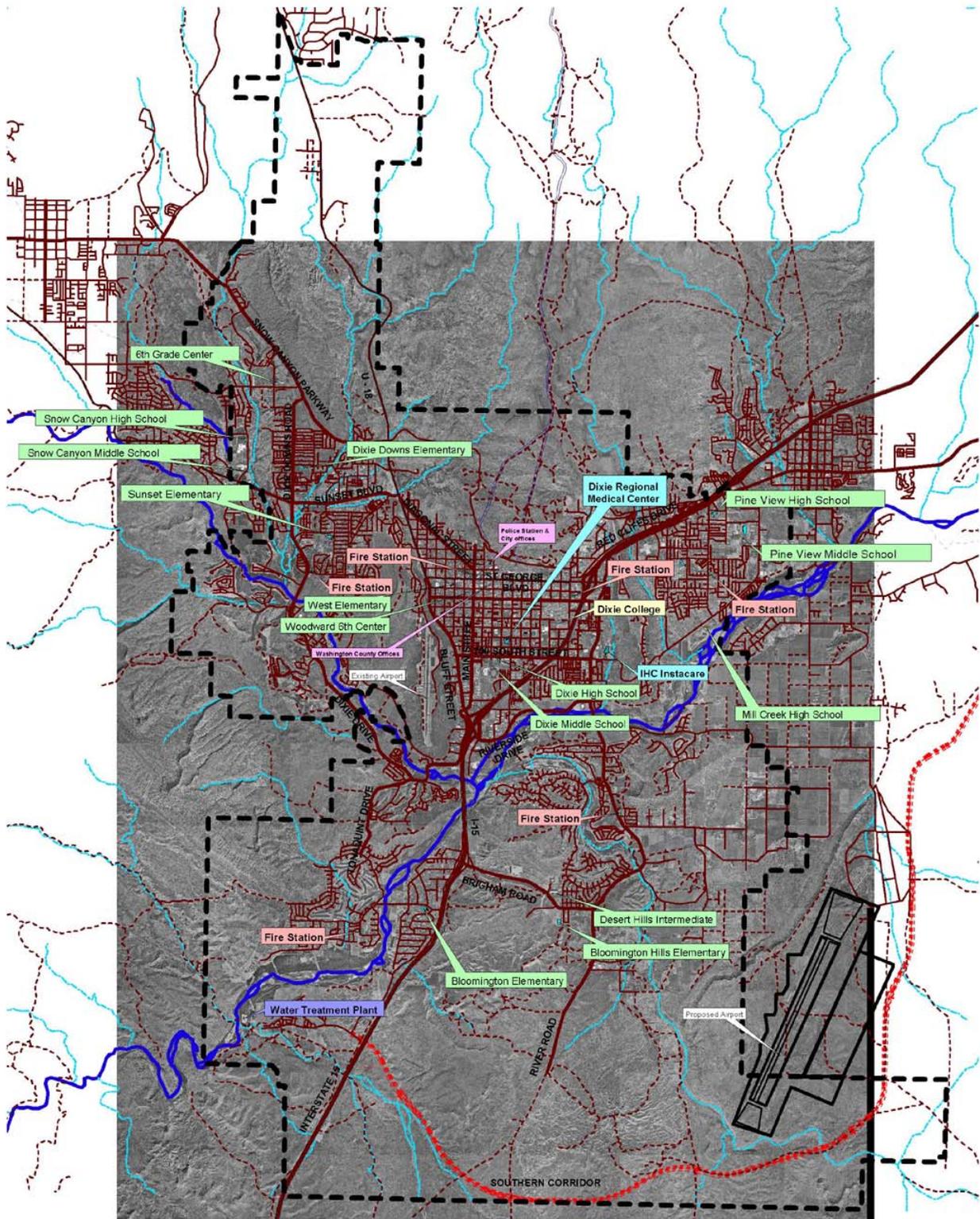
Figure 6-23: Aerial view of Dixie State College.

located directly east of the College on both sides of highway I-15 in areas designated, and zoned, for high-density residential use.

Because student apartments tend to generate high parking and traffic impacts, there is a strong community desire not to allow student apartments west of the campus where they will impact stable residential neighborhoods. Since highway I-15 cuts off convenient access to the east, the only areas left to accommodate the doubling of the College enrollment by 2021 are the commercial areas north and south of the campus and eastward on 100 and 700 south. This suggests that rather than the typical apartment complexes, accommodations for students should be integrated into mixed-use commercial areas, such as with apartments over stores and offices.

6.2.2.4 COLLEGE LAND USE POLICIES

1. The City shall work closely with the College to assure that future student housing needs are met as cost-effectively as possible, and to minimize impacts on surrounding stable residential neighborhoods. This will require detailed planning involving the City, the College, and surrounding land owners.
2. The City will seek land use regulations that will allow affordable rental housing to be accommodated seamlessly and attractively into other land use zones in the vicinity of the College.



PUBLIC FACILITIES



6.23 HEALTH CARE

Dixie Regional Medical Center (DRMC) is a full-service, regional hospital with physicians representing nearly every specialty. It is a 137-bed facility comprising 180,000 sq.ft. It offers:

- ❑ medical/surgical inpatient services,
- ❑ outpatient surgical services,
- ❑ cancer treatment,
- ❑ women and children's services
- ❑ cardiology services including heart catheterization,
- ❑ a full range of diagnostic imaging, emergency services,
- ❑ an air ambulance and
- ❑ other diagnostic and therapeutic services.

Dixie Regional Medical Center currently has a medical staff of 132 full-time physicians and 25 part-time physicians representing specialties not available elsewhere in the area. DRMC has been able to meet 86% of Washington County residents' medical needs without referring to another facility. The only counties in Utah with a lower percentage of out-of-country referrals are Salt Lake and Utah counties due to the large tertiary centers located there. To provide the health care services that the growing population will require, DRMC purchased 60 acres of ground for a medical campus at the corner of 700 South and River Road. In 1998, DRMC opened an outpatient health center on this property. It houses a primary care clinic, a diagnostic imaging center, an InstaCare, physical therapy and an occupational health and injury center and a retail pharmacy. Due to the population growth and relative isolation of St. George, DRMC is planning to expand inpatient services on its River Road site. A building of approximately 300,000 sq.ft. housing 132 inpatient beds, 12 outpatient beds, and 8 operating rooms will be constructed by 2003. Once the River Road facility is completed, the current campus will be renovated as a specialty hospital, including a center for women, children and newborn intensive care.

As the Medical Center continues to grow, so will the number of people associated directly and indirectly with it. Currently, DRMC employs 1,100 people. By 2003, it is estimated that DRMC will have 1,500 employees. Physicians associated with DRMC employ approximately 500 additional people.

As Washington County continues to grow, DRMC sees the need for de-centralized medical clinics spread throughout the communities of Washington County.

The City has already worked closely with the Medical Center in the planning of the new campus. It will be important that this collaboration continue to assure that the Medical Center is surrounded by compatible uses, adequate access and that the potential for expansion is not precluded.

6.23.1 HEALTH CARE POLICIES

1. Health care facilities shall be buffered from adjacent land uses to mitigate potential impacts to/from noise and lights (traffic, emergency vehicles, helicopters, etc.).
2. Health care facilities that will utilize emergency vehicles shall be located so as to have access to arterial roads without passing through neighborhoods.