

# **SNOW CANYON STATE PARK RESOURCE MANAGEMENT PLAN**

Prepared for:

**State of Utah  
Department of Natural Resources  
Division of Parks and Recreation**

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## ***PREFACE***

The growing popularity of Snow Canyon State Park can be traced to the efforts of Utah's tourist industry, exposure on television and in motion pictures and word-of-mouth from tourists drawn to this dramatically beautiful 5,688 acres. But whatever the reason for significant increases in park visitation over the past decade, nearly three quarters of a million visitors annually and a rapidly growing community have had an impact on the sensitive desert environment and the limited resources of this spectacular canyon.

The goal of the Snow Canyon Resource Management Planning Team is the implementation of this plan, under the direction of Utah Division of Parks and Recreation, to protect these valuable resources while guiding the park into the 21<sup>st</sup> century.

Recommendations were reached by a consensus of a team of community leaders, with a great deal of input from government agencies, and the general public including user groups such as scientists, climbers, equestrians, hikers, campers, cyclists and others who love the park.

The result is a vision for the future of Snow Canyon State Park *to sustain ecosystem health and assure the conservation of resources, provide interpretation and education for visitors and serve the recreational interests of visitors*. Secondary elements to the vision of the future of the park also include *expansion and acquisition with limited, tasteful improvements and new facilities*.

This plan makes clear recommendations for management of the park over the next twenty years. It is also created to be fluid and dynamic, evolving as the park and community develops and individual portions of the vision statement are achieved.

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## ***VISION FOR THE FUTURE***

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## ■ *Executive Summary*

In January, 1997 the Utah Division of Parks and Recreation met with community leaders from Washington County and throughout Southwestern Utah to initiate a resource management planning process for Snow Canyon State Park. The process was customer driven, resource based and team directed. The outcome is the result of several months of team effort and intense public involvement.

This plan makes recommendations for the achievement of three key vision elements to guide the future of Snow Canyon State Park and the local community relating to implementation of the plan.

These three elements focus on:

- C Sustaining ecosystem health and assuring the conservation of resources.
- C Providing interpretation and education to the community and park visitors.
- C Serving the recreational interests of visitors.

This balance will maintain the values of the park while securing the future of the resource. The plan will be a challenge to achieve and will not happen without the support of users, community leaders and the Division of Parks and Recreation. Each of these stakeholder groups were involved throughout the planning process to help insure the successful implementation of the plan.

The finished product represents much more than just a resource management plan. It is the first step in partnershiping with users, communities and other groups to bring about better management, customer service and facilities development for the wide array of interests represented at Snow Canyon State Park.

A few key recommendations supporting the vision elements of the plan include:

- A. Sustain ecosystem health and assure the conservation of resources.
  - 1. Perform more research to better understand baseline biological and cultural resource knowledge.
  - 2. Map areas of species sensitivity and recreation activity and manage to minimize resource impacts.
  - 3. Identify and prioritize lands important for acquisition or management as a means of protecting park resources related to visual resources, biological importance and development potential.
  - 4. Recommend management direction related to water resources, considerate of human needs and natural resource integrity.
  - 5. Establish resource monitoring programs.
  
- B. Provide interpretation and education to the community and park visitors.
  - 1. Establish a committee made up of representatives from school districts, Washington County, universities and other groups to establish, provide guidance and insure success for an education interpretation program within the park.
  - 2. Develop an education curriculum and interpretation plan through committee for all age groups. Examples include school groups regularly visiting Snow Canyon for resource education as an extension of formal classwork, cultural resource education interpretive programs and guest speakers discussing a variety of topics such as water resources or the geology of Snow Canyon.
  - 3. Create a partnership with Washington County for the development of a Visitor/Education Center to serve the education, administrative and informational needs of the park, the Red Cliffs Desert Reserve, academic groups and visitors.
  - 4. Partnership with academic institutions such as Southern Utah University (SUU) and Dixie College to promote and enhance research such as GIS mapping of resources and/or social research relating to park visitor experiences.
  - 5. Create a docent program to help address staffing concerns associated with expanding programming.

- C. Serve the recreational interests of visitors.
1. Improve day use facilities by providing restrooms, picnic areas and expanded parking.
  2. Enhance pedestrian use and safety in the park by proposing to reduce traffic speeds, provide a pedestrian trail throughout the park and make the northern part of the roadway a one-way exit beyond Galoot Hill once the Snow Canyon parkway is completed.
  3. Implement climbing and equestrian management plans which provide for better management and opportunity for these activities in the canyon.
  4. Identify lands for acquisition or management oversight which would expand recreation opportunities such as backcountry camping and provide for longer hiking trails.

Another key recommendation is the development of an Memorandum of Agreement (MOA) with local communities to provide joint management oversight of the park. Opportunities provided within the MOA will commit Utah Division of Parks and Recreation to consult and cooperate with local communities. This approach to management of the park will relate particularly to issues such as development funding, partnershiping, plan implementation, establishing operational priorities and management direction. Examples of this cooperation may include sharing of services, joint development funding, and formal management recommendations from the advisory board.

The success or failure of the plan, like the creation, will depend on each stakeholder working to conserve park resources, strengthen the community, and satisfy park visitors in a rapidly growing community of recreation oriented citizens. While this plan does not represent all the desires of any single team member or stakeholder, it does represent the harmonious blending of community values, agency recommendations, customer needs and expectations through an open and collaborative process.

## **■ Mission Statement**

The mission of Snow Canyon State Park is to serve, and rely upon, people to help balance ecosystem health with recreation in an interpretive outdoor setting.

## **■ Vision Statement**

The vision for the future of Snow Canyon State Park is to sustain ecosystem health and assure the conservation of resources; provide interpretation and education for visitors and to serve the recreational interests of visitors. Secondary elements to the vision of the future of the park also include expansion and acquisition with limited, tasteful improvements and new facilities.

# ***INTRODUCTION***

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## ***● Purpose of the Plan***

This Resource Management Plan is intended to help guide the Utah Division of Parks and Recreation in the stewardship of Snow Canyon State Park for the resource management, recreation and heritage of the citizens of Utah, tourists, and user groups into the 21<sup>st</sup> century. Currently, annual visitation is inching towards three-quarters of a million people with many visitors to nearby Bryce Canyon and Zion National Parks, as well as Lake Powell and Lake Mead National Recreation Areas also visiting Snow Canyon State Park.

The combination of scenic beauty and mild climate have turned this once out-of-the-way scenic attraction into a popular destination in the growing tourism center of Southwestern Utah. Unless the concerns of managing Snow Canyon resources today are adequately addressed in a comprehensive plan, they will become the problems of the future.

Issues such as sustaining a healthy ecosystem, traffic, increasing recreational use, concessions, the need for visitor information, erosion, trails, signage, accessibility and park size need to be confronted. As stewards of Snow Canyon State Park and its resources, the Utah Division of Parks and Recreation, along with other interested agencies, user groups and individuals have come together to create a comprehensive plan. It will provide flexible guidelines for the management and development of the park for the next twenty years. However, the main goal of this plan is to provide direction and make recommendations relating to the future of the park based on a general consensus of the public and focus groups.

## ■ *The Planning Process*

In 1995, the Utah Division of Parks and Recreation completed *Frontiers 2000*, a system guide to move Utah State Parks into the 21st century. This plan identified a number of actions which must occur to better meet the recreational and leisure needs of customers as the agency entered the new millennium. In this document one of the actions identified was the need for resource management planning within the various state parks of the Division.

Such plans were to be written to reflect the needs and expectations of customers, citizens of the State of Utah and visitors to each park area. In 1995, the Division began compiling data which included information on endangered and threatened species, water resources, natural hazards, and visitor information for the initiation of a planning process for Snow Canyon State Park.

While information was being collected, a plan was being completed at Territorial Statehouse State Park which used a new process, based heavily on community involvement and problem solving. The process also called for the creation of a team of community members and Division staff who together formulated a vision for the future of the park consistent with local values and reliant upon cooperative local support for plan implementation.

Planning processes such as this have long been advocated. The Division of Travel Development's "Chance or Choice" meetings held in 1994 and 1995 identified a wide variety of recommendations largely relating to the federal government but applicable to state agency planning as well. A few of those recommendations, which the Utah Division of Parks and Recreation has also chosen to follow include:

- C     Involve local communities in the federal (or state) planning processes from the beginning.
- C     The Division of Travel Development (or State Parks and Recreation) need to communicate better with the community.
- C     Improve cooperation between federal (or State Parks) government and counties.

In January, 1997 the Division gathered community leaders together for the purpose of familiarizing them with the customer-driven process and the task of creating a resource management plan for Snow Canyon State Park. During this meeting the Division also solicited the names of community members with an interest and willingness to sacrifice the time needed to chart a course for the future. Team members were selected for a variety of reasons, not the least of which was, a commitment of time and a desire to be part of the process. Nine persons were selected and two staff persons were assigned to the process.

The team was chartered to meet monthly, and make recommendations while keeping the planning and communication process open between the team and various user groups. The final task was to deliver a plan to the Utah Parks and Recreation Board in January, 1998.

Public involvement for the plan included newspaper articles, radio programs, several public scoping meetings and numerous focus group meetings with constituents who had a vested interest in park issues.

In the first public meeting, attendees were asked to sit in groups, then together answer six questions. The questions and responses are listed in the following Table 1.

<b>FIRST SCOPING MEETING - ISSUES ANALYSIS (Table 1)</b>	
<b>Question</b>	<b>Responses</b>
What is the park's greatest asset?	<ul style="list-style-type: none"> <li>- Geologic structure</li> <li>- Diversity of activities in a beautiful setting</li> <li>- Scenic beauty</li> <li>- Biologic diversity</li> <li>- Recreation opportunity</li> <li>- Only quality climbing on long, face routes in SW Utah</li> <li>- Viewshed and open space</li> </ul>
What are the park's greatest liabilities?	<ul style="list-style-type: none"> <li>- Limited size</li> <li>- Deceiving tranquility</li> <li>- Small size for amount of recreation &amp; development</li> <li>- Human induced habitat destruction</li> <li>- Lack of awareness of fragile ecosystem.</li> <li>- Lack of visitor education and enforcement</li> <li>- Overutilization of park</li> <li>- Lack of infrastructure to accommodate growth needs</li> </ul>
What are opportunities for the future of the park?	<ul style="list-style-type: none"> <li>- Diversity of education and recreation</li> <li>- Carefully planned recreation and education</li> <li>- Education and preservation through involving community</li> <li>- Spiritual happiness</li> <li>- Accommodates numerous and varied uses without much conflict</li> <li>- Model of biodiversity and recreation</li> <li>- Expose youth to alternative activities based on community ownership.</li> </ul>
What are the threats to the future of the park?	<ul style="list-style-type: none"> <li>- Uneducated use with additional development</li> <li>- Alienating activities and people</li> <li>- Uninformed or careless people</li> <li>- Over regulation</li> <li>- Unregulated over use</li> <li>- Private development east and south of the park</li> <li>- Public abuse due to lack of awareness</li> <li>- Visitor overuse and misuse</li> </ul>
How do you envision the park in 2010?	<ul style="list-style-type: none"> <li>- As much as possible as it is now</li> <li>- Very controlled visitor experience with users organized to manage their own use and rotate use areas for rehabilitation</li> <li>- Maintaining visual and biological character</li> <li>- More native plant and animal life because of educated use and controlled development</li> <li>- World class destination for all activities</li> <li>- High quality experience</li> <li>- Maintain harmony between natural area and increasing visitation.</li> <li>- No change in West Canyon</li> <li>- Maintain biological diversity with conforming uses in balance with the natural environment of the park</li> </ul>
What should be the main focus of the Snow Canyon Resource Management Plan?	<ul style="list-style-type: none"> <li>- Sustainable use</li> <li>- Education of users</li> <li>- Preserve the biology and educate users</li> <li>- Allow as much recreation and education as possible while preserving the park's sensitive resources</li> <li>- Recreational use with visual management</li> <li>- Create a desire to actively put education to use through a team effort</li> <li>- Resource protection through education</li> <li>- Redefine the mission</li> <li>- Create a useable, enforceable and agreeable plan - nothing less.</li> </ul>

Subsequent team meetings identified both values and vision elements for the park. Values representative of the individual members of the local planning team and used in the process are identified as:

- Protected scenic open spaces
- Healthy ecosystems
- Opportunities for natural quiet and solitude
- Educational opportunities
- Safe use
- Forthrightness
- Personal responsibility
- Implementation
- Upholding the public trust
- Personal freedom of choice
- Reasonable public access
- Recreation
- Friendly
- Neat and clean
- Open communication
- Public involvement
- Ability of community to help.
- Getting things done in a timely manner
- Don't accept the *status quo* - "The thinking that got us here won't get us where we need to go."

Team members were also asked to write a postcard identifying their vision of the future based on public input from the first meeting and their experiences as park visitors and community members. These visions were varied but three common themes were identified as key elements:

- Sustain ecosystem health and assure the conservation of resources
- Provide education and interpretation for visitors
- Serve the recreational interests of visitors

Over several months, issues were identified, clarified and debated. The majority of recommendations (see Table 2) were discussed with user groups prior to releasing the plan to eliminate the element of surprise and make constituents aware of potential concerns.

<b>SNOW CANYON R.M.P. IDENTIFIED ISSUES (Table 2)</b>	
Natural Resource Issues	<ul style="list-style-type: none"> <li>U Identification of management of sensitive park areas (biological, cultural, waterholes)</li> <li>U HCP constraints</li> <li>U Park biotic health - quantified &amp; recreation impact analysis</li> <li>U Protection of viewsheds</li> <li>U Water development within park.</li> </ul>
Property issues	<ul style="list-style-type: none"> <li>U School section lands</li> <li>U Redefine park boundaries</li> <li>U Identify development and transition zones</li> <li>U Property issues - trade, protect - expansions to South and disposal in North.</li> <li>U Land use recommendations on adjacent properties - covenants, easements.</li> </ul>
Recreation issues	<ul style="list-style-type: none"> <li>U Recreation in all its forms - hiking, climbing, etc.</li> <li>U Entrance booths - issues (education, day use, convenience)</li> <li>U Day use - number of persons</li> <li>U Limiting access - capacities, zoning -- seasonality</li> <li>U Accommodating unlimited visitation</li> <li>U West Canyon uses</li> <li>U Determine present, future and acceptable uses</li> <li>U Winter Quarters Trail - management? - BLM - WSA</li> </ul>
Education and Interpretation	<ul style="list-style-type: none"> <li>U Enhance relations with school district/college/university</li> <li>U Education of users (Interpretive Plan)</li> <li>U Education center, HCAC - location ?</li> </ul>
Facilities Issues	<ul style="list-style-type: none"> <li>U HCP mitigation - trail, parking, visitors.</li> <li>U Transit - bikes, not just cars.</li> <li>U Utility design - architecture.</li> <li>U Set development priorities</li> <li>U Bike/hike trail connection</li> <li>U Signing</li> <li>U Road ownership and traffic</li> </ul>
Neighbor Relations	<ul style="list-style-type: none"> <li>U Fit with county wide recreation and education picture</li> <li>U Pursue management of Paradise Canyon</li> <li>U Local government involvement - plan and post. Partnership.</li> </ul>
Funding and Administration	<ul style="list-style-type: none"> <li>U Management of commercial uses.</li> <li>U Staffing needs</li> <li>U Funding issues</li> <li>U Who should be the management entity?</li> <li>U Management oversight by community?</li> <li>U Risk management/ liability/emergency services</li> <li>U Off park responsibilities -- Gunlock State Park</li> </ul>

Once all issues were identified and discussed, the team began to recommend ways to resolve the issues. Meetings were long, and at times tedious, as the charter for this process called for team “consensus” on each recommendation. Consensus for the purposes of this process was defined as “the ability of each team member to support the recommendation though they might not completely agree with it.”

The concept of consent is an important one. Today in resource management, there is a wide variety of demands and desires for use of a common commodity. While each team member had different viewpoints on a subject, they each recognized resource managers struggle with finding balance among a variety of interests and no one perspective will always prevail.

Once recommendations were identified, the team began to have follow-up meetings with focus groups and the general public as part of their commitment to keeping this an open public process. Groups, organizations or individuals with whom team members met during the process or who received a copy of the draft document included:

- < St. George Rotary Club
- < Dixie Sunrise Rotary Club
- < Franklin Covey Institute of Fitness
- < St. George Noon Exchange Club
- < Access Fund
- < Green Valley Spa
- < Tuacahn Amphitheater and Center for the Arts
- < Snow Canyon Water Compact
- < HCAC
- < HCP Education Committee
- < Washington County Travel and Convention Bureau
- < Southern Utah Planning Authorities Council (SUPAC)
- < RDCC
- < Park Board members
- < Local politicians and other stakeholders (Lorin Jones, Bill Hickman, Dan McArthur and others present at a luncheon held October 23 at the Holiday Inn)

In addition, *The Spectrum* newspaper printed at least three front page articles about the process and team members took part in talk show programming on local radio stations KONY, KDXU and KSGI. And, at least 20-25 community leaders received personalized letters regarding the plan and

the process.

These follow-up meetings were supplemented by minutes of each monthly meeting mailed to more than 60 persons on the mailing list. Table 3 represents a brief overview of the public involvement for the Snow Canyon RMP.

<b>PUBLIC INVOLVEMENT FOR THE SNOW CANYON RMP (Table 3)</b>	
<b>Activity</b>	<b>Date</b>
Meet with community leaders	January
Team created representing cross section of community/interests	March
Radio Program & News Releases	April 21 to April 29
Public meeting	April 29
Focus group meetings	Varied with availability
Radio Program	July 22
Public Meeting	July 23
Focus group follow up	Varied with availability
Radio Programs	October 22-23
Present Draft to community leaders	October 23
Public Meeting/Comment Period	October 23 - November 24
Public Meeting/Park Board Adoption	January 22-23

This document represents the formal plan, finalized at the end of a 30-day public review process wherein individuals, groups and agencies were encouraged to review and submit comments on the plan to the address listed in the conclusion.

### ***C History of Utah State Parks and Recreation***

Utah State Parks and Recreation Commission was created in 1957, making Utah the 48th state to develop a state park system. At this time, a commission was charged with responsibility to make "...an overall careful survey of much of Utah's park and recreation potential, with field investigation

of many areas, and sites of scenic, historic, archaeological and geologic interest.”

By the time the 1959 legislative session ended, the inventory was complete and 118 potential park sites had been identified. The 1959 legislature appropriated an additional \$1 million to launch the state park program.

Currently, Utah has a diverse collection of 45 parks and administers several other statewide recreation programs.

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***“The Board of Parks and Recreation shall be the policy-making body of the Division of Parks and Recreation”***

**Utah Code 63-11-12**

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Utah State Parks and Recreation is guided by an eight member board. According to Utah Code 63-11-17, *“The board shall have power to (1) establish the policies best designed to accomplish the objectives and purposes set out in this act; (2) make regulations governing the use of the state park system.”* The Utah Division of Parks and Recreation (Utah State Parks) is a Division within the Utah Department of Natural Resources.

In 1996, Utah State Parks completed *Frontiers 2000: A System Plan to Guide Utah State Parks and Recreation into the 21st Century*. This systems plan articulated the agency’s foundational values, mission and overall direction for the next decade.

From many meetings and public opinion surveys completed, the agency already knows program users favor acquiring new lands for State Parks and Recreation areas. The public and the agency strongly support preserving naturalness and allowing only minimal, necessary development.

## **FOUNDATIONAL VALUES OF UTAH STATE PARKS AND RECREATION**

- *Customer service and satisfaction*
- *Protect and sustain resources*
- *Assure quality of life through quality recreation*
- *State and community satisfaction*
- *Employee satisfaction*
- *Effectiveness and efficiency*

Program users strongly support historical or cultural values for state parks and programs, and the interpretation of those values. Program users also want to protect recreation resources for future generations.

Snow Canyon State Park is located in and administered by the Southwest region of Utah Division of Parks and Recreation. Region headquarters are located in Cedar City. There are a total of 14 parks

**Utah State Parks Mission:**  
*Enhance the Quality of Life in Utah through Parks, People and Programs*

in the Southwest region which extends from Nephi with Yuba State Park, east to Anasazi and Escalante State Parks and over to Snow Canyon. This region of the Division continues to experience the same pressures as other public lands in Southern Utah related to increased use, natural resource sensitivity and population growth with limited budgets and staff. Snow Canyon State Park is arguably the agency's best example of these issues within the region.

# ***THE PARK***

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## **■ Overview**

Noted author and historian Juanita Brooks may have been standing in what is now Snow Canyon State Park when she said of the southwestern corner of Utah, “It looks like the good Lord took everything left over from the creation, dumped it here, then set it on fire.”

This small scenic area, named for early Mormon settlers Lorenzo and Erastus Snow, is a dramatic mix of unique geology including volcanic cones, sand dunes, towering red sandstone cliffs and twisted layers of rocks strewn helter-skelter over 5,688 acres. Within park boundaries, lava flows date back three million years and 200-million-year-old sedimentary Mesozoic sandstone, left over from ancient inland seas, has eroded over time to expose horizontal or tilted and folded strata. Snow Canyon also represents the meeting place of three major geophysical areas - the Mojave Desert, Great Basin Desert and the Colorado Plateau. A kaleidoscope of color ranges from pure white, brilliant red and varying shades of pink sprinkled with sparse green foliage against an accent of black lava rock.

The canyon is also a biological treasure. Many unique species of animals including Gila monsters, desert tortoise, peregrine falcons and golden eagles are found in the park.

Snow Canyon State Park is located on Utah Highway 18, between the Town of Ivins and southwestern Utah’s largest community, St. George, nine miles to the south. Five miles long from beginning to end, Snow Canyon State Park is the third largest land area in the state park system. This popular tourist attraction is widely recognized as one of the most beautiful natural sites in the state. Second only to Zion National Park as a Washington County scenic highlight, Snow Canyon State Park attracted 649,571 visitors in 1996, slightly down from a record 686,000 in 1995 (see Site Map).

## ● *History*

Discovered in the early 1850's by cowboys searching for lost cattle and grazed by herds since the first Mormon settlers arrived, there is a great deal of archeological evidence to support the presence of ancient civilizations within the boundaries of Snow Canyon State Park.

Orval Hafen may well be the most significant name in Snow Canyon's modern history. The St. George native was ahead of his time when, in the mid-1950's, he envisioned his home town as a tourist mecca. His ideas for a tourist theme park and numerous golf courses were bold long before others saw the potential for this area's now-thriving tourist industry. Considered quixotic by some, Orval Hafen imagined a winter resort community nestled in the red rocks he loved. His dream has long since been realized. The St. George area today - as he imagined it - attracts thousands of new residents in search of the ultimate retirement lifestyle including more than a dozen world class golf courses in a radius of 50 miles. "I can't get away from the feeling that the destiny of Dixie lies in her climate and her scenery and that perhaps my mission is to help bring this about." As a Utah State Senator, Orval Hafen was an effective advocate for Utah's Dixie and was chief author of a bill creating a state parks system with Snow Canyon as one of the earliest inclusions.

With Hafen in the legislature and the state actively pursuing an effective park management system, Washington County Commissioners Rudger Atkin and Jim Lundberg encouraged Harold Fabian of the state parks commission to visit an amazing concentration of sandstone cliffs and lava flows located only a short distance from downtown St. George. During Fabian's visit, the team negotiated the first purchase toward the creation of Snow Canyon State Park. Joseph Blake was paid \$20,000 - approximately \$22 per acre - for his 898-acre ranch in Diamond Valley including the ranch house, farm building and water from two springs. Blake's property would be added to the 296 acres already donated by Washington County, then transferred to the state parks commission in 1959.

Additional private tracts totaling 640 acres were purchased by the state in 1960. On January 9, 1964 the Bureau of Land Management, an agency of the U. S. Department of the Interior, transferred title to 3,854 acres of federal land to the state of Utah through a transfer under the Recreation and Public Purpose Act bringing the park's total acreage to 5,688.

The county and the state began improvements immediately, constructing a 7-mile water line from Blake Spring in Diamond Valley to the area now known as the Snow Canyon Campground. Water lines to serve the campgrounds were put in place and at the same time, plans for a four-unit restroom became reality. In 1958, Highway 8 through the park to Ivins was graded and graveled. Ten years later, Washington County and the state highway department improved access roads to the campground, but it was 1970 before Utah Highway 8 was paved. Also in 1970, construction of a water treatment plant near the old Blake ranch house in Diamond Valley was approved. In 1974, the initial phase of development began on the campground. Paving the road through the canyon from Ivins to Highway 18 was completed in 1977. In 1984 modern restrooms with hot showers were added to the campground.

Today the magnificent scenic beauty of Snow Canyon attracts thousands of nature lovers, photographers, scientists, picnickers, hikers, bikers, climbers and equestrian enthusiasts. They come for a variety of reasons ranging from serenity and Sunday drives, to exploring caves, studying Indian lore or playing in the sand. TV production companies too, have found the natural setting perfect for commercials.

Over several decades, Snow Canyon has also been featured as the backdrop in such notable feature motion pictures as “A King and Four Queens” starring Clark Gable, “The Conqueror” with John Wayne and Susan Hayward, “Run of the Arrow” with Rod Steiger in the leading role, “They Came from Cordura” featuring Gary Cooper and Rita Hayworth, “Butch Cassidy and the Sundance Kid” with Paul Newman and Robert Redford in the title roles, Redford’s “Jeremiah Johnson” and “The Electric Horseman,” another Redford film with Jane Fonda.

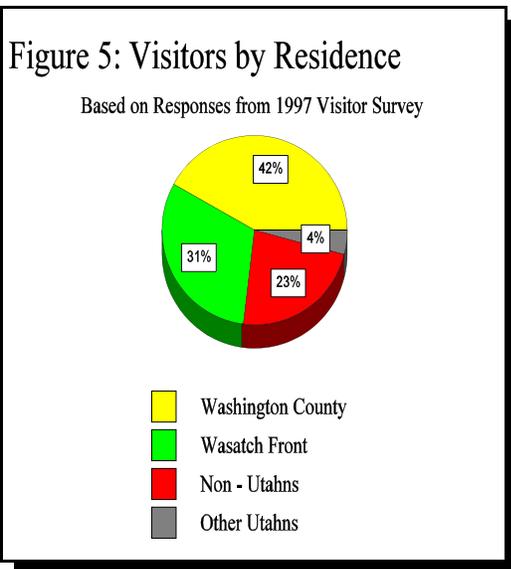
## ■ ***Tourism and Visitor Profile***

Tourism is big business in the St. George area. The 1996 *Economic and Travel Industry Profiles*

for Utah Counties, prepared by the Division of Travel Development, Utah Department of Community and Economic Development, preliminarily estimated travel spending in Washington County at approximately \$180 million with travel and recreation employing 3,677. Gross taxable sales for tourist related services nearly doubled between 1990 and 1995. According to the Utah State Tax Commission, sales in Washington County jumped from \$50 million in 1990 to \$93 million in 1995. The Washington County Travel and Convention Bureau reports the local 3 percent transient room tax generated \$744,496 in 1993, increased another \$100,000 by 1995 and produced more than \$900,000 in 1996. Snow Canyon State Park contributed to this important economic funding source.

Snow Canyon currently hosts over 600,000 visitors annually. The 1996 *Economic and Travel Industry Profiles for Utah Counties*, lists Snow Canyon as the fourth most visited regional recreation

location in Southwestern Utah behind Zion National Park, Bryce National Park and Glen Canyon National Recreation Area.



The popularity of this site is further supported by the 1997 Snow Canyon State Park Visitor Survey completed by the Dixie Business Alliance at Dixie College in partnership with the Utah Division of Parks, which asked: “If Snow Canyon were closed for use what other attraction would be the substitute choice for a recreation area?” The overwhelming response was Zion National Park.

The visitor survey was conducted during the period of April 5-27, 1997. Survey results may not be representative of the visitor profile on a year-round basis but do represent visitor attitudes, needs and expectations for this time period. Further surveys should be conducted to enhance reliability of data collected. The intent of the survey was to better understand the customer of the park as well as broadening the public involvement component of the plan. The survey is not representative of the

general populace of the state.

The park is not just a popular site for out-of-area tourists. Snow Canyon is also an important recreation area for local residents. This observation is supported by the visitor survey illustrating 42% of survey respondents were from Washington County while 58% of survey respondents were from out of the area or state (see Figure 5 above).

Survey respondent satisfaction at the park is very high with exactly half of respondents reporting they were very satisfied and a total of 80.7 % rating their experience as satisfying or very satisfying. Visitors to the park are generally characterized into two categories: local and out-of-area. Local visitors utilize Snow Canyon differently than out-of-area tourists. Local residents are more likely to visit the sand dunes, picnic, or drive through the park while out-of-area visitors are more interested in camping, hiking, sightseeing, or photography in the canyon.

The primary visitor activity is sightseeing followed by hiking and walking/exercising. The following table illustrates a profile of visitors.

<b>VISITOR DIFFERENCES - LOCAL vs. OUT OF AREA (Table 4)</b>			
<b>Attribute</b>	<b>Median</b>	<b>Local</b>	<b>Out of Area</b>
Income	\$ 42,307.00	Lower than average respondent.	
Visit Frequency	2 per year	Much higher than median	
Visit length - Less than a day	2 hours		Longer than local user
Visit length - more than a day	4.5 days*	Rarely camped	
Primary activities	Varied	Picnicking, passing through	Camping, hiking, sightseeing.
Treat the park as:		Local resource	State or national resource.

*\*= This information conflicts with state park reservation database information which shows the average length of stay during this period as 2.8 days.*

One aspect of the survey discussed issues and improvements. Even mindful of the limits of the Snow Canyon Visitor Survey, there were some statistically significant recommendations which came

from respondents including:

- C Focus most of the park's attention on natural resource management and controlling visitor impacts.
- C Don't tighten restrictions on walking or hiking.
- C Increase the number of restrooms.
- C Don't tighten climbing restrictions.
- C Acquire property for additional recreation opportunity and resource protection.
- C Don't tighten restrictions on horse use.
- C Minimize overcrowding.
- C Develop more picnic areas.
- C Road congestion should not be regulated.
- C Number of trails should be increased.

In 1995 the Utah Division of Parks and Recreation completed a statewide survey as contracted through the Institute of Outdoor Recreation and Tourism at Utah State University. This survey was not as issue specific as the Snow Canyon survey but did represent a statistically significant (95% confidence interval) sample statewide. The respondents of this survey also identified some important issues/observations related to the entire park system. They include:

- C Over 94% are either satisfied or very satisfied with the park system.
- C Seventy percent feel state parks should work to acquire easements or rights of way on private lands surrounding the parks.
- C The idea of closing a park occasionally to allow vegetation to rest and restore itself is agreed with by 88% of respondents.
- C Two-thirds of respondents support the idea of limiting the number of people in a park and closing the gates when the park is full.
- C Eighty-four percent supported prohibiting the removal of rocks and vegetation from the parks.

These two surveys indicate the general public supports the conservation of resources and recognizes the importance of land base for recreational and resource integrity consistent with vision elements of the team and the issues identified during public scoping.

## ● Demographics

This popular park is located in one of the fastest growing counties in Utah, itself one of the fastest

growing states in the nation. Statewide population surpassed two million during 1996 - a milestone in Utah's history. Almost every county in Utah experienced a population increase between 1995 and 1996. Washington County experienced the largest net in-migration with approximately 3,456 persons. Three other counties--Davis, Salt Lake and Utah--also experienced net in-migration of at least 1,000 persons. Twenty-six of Utah's 29 counties experienced net in-migration in 1996, compared to 19 in 1995. Unprecedented growth is the result of healthy lifestyles and economy, exceptionally beautiful environment, clean air and water and a low crime rate. Also impacting the numbers is a great deal of limelight in highly visible surveys calling the Beehive State "most liveable in the U. S." (1995 annual survey of state comparisons by Morris Quinto Company of Lawrence, Kansas); "top entrepreneurial hot spot" (*Kiplinger Newsletter*, January, 1996); "healthiest economy" and "best place to locate a business" based on property growth, disposable income, low energy costs and high graduation rates (*Financial World Magazine*, September, 1995).

Utah is demographically unique among states for a variety of reasons. The state's population is younger, lives longer, has a higher fertility rate and more persons per household than the nation as a whole. These characteristics reinforce what is the hallmark of Utah's demographic profile--its rapid rate of population increase. In keeping with statistical growth projections illustrated in Table 5 (below) between July 1, 1995 and July 1, 1996, Utah's population grew by approximately 43,334 people--from 1,959,025 to 2,002,359.

UTAH GROWTH PROJECTIONS - Table 5							
Planning District/ County	1980 Census	1990 Census	July 1996 Pop.	Projection 2000	Projection 2010	Percent Change 1980-90	Avg. Annual Percent Change 1980-1996
Southwest	55,489	83,263	116,900	139,755	199,415	50.1	4.7
Iron	17,349	20,789	28,000	34,371	44,457	19.8	3.0
Washington	26,065	48,560	72,900	86,218	130,521	86.3	6.6
State Total	1,461,027	1,722,850	2,002,450	2,174,498	2,737,166	17.9	1.9

#### Utah Population Highlights

- C Median age - 27.1 years (1995)

- C Birth rate - 20.3 births/1,000 population ranked highest in the U. S. (1995)
- C Death rate - 5.4 deaths/1,000 population ranked 2<sup>nd</sup> lowest in the U. S. (1996)
- C Household size - 3.12 persons/household ranked largest in U.S. (1995)
- C Percent of population living in Salt Lake, Davis, Utah and Weber Counties - 77%

Washington County, with St. George City as its largest population, has nearly 70,000 residents, and an annual population increase of about 8 percent with a 36.6% change from 1990 to 1994. *Sources: Bureau of the Census, 1980 & 1990 Census, and Governor's Office of Planning and Budget, Economic Report to the Governor, January, 1997 as taken from the DCED online factbook.* The population has doubled approximately every decade since 1950 when census figures reported 4,562 residents in the county.

The St. George area is unique in the state in terms of climate, vegetation, animal life and geologic features. It has the lowest elevation and generally the warmest daily temperatures in Utah.

Since 1992, when many state and national corporations began opening branch offices to accommodate the growing population in the St. George area, Washington County's longstanding reputation as a retirement community has given way to a more balanced influx including families with parents working in jobs relating to construction and the service industries. Reflecting that change, the Washington County School District is one of the fastest growing districts in Utah with more than 17,500 students.

## ***RESOURCES***

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## ■ ***Scenic***

Snow Canyon State Park is a strikingly beautiful and colorful canyon attractive to visitors for a variety of reasons. Climbers find Snow Canyon unique in all of southwestern Utah as a climbing venue due to majestic sandstone cliffs, desert varnish, face holds and other natural features necessary for protection. Equestrians have found peace and tranquility in the beauty of Snow Canyon with a documented user history spanning two centuries. Professional photographers find Snow Canyon State Park is the perfect setting for wedding photography, family portraits and commercial backdrops. Amateur shutterbugs enjoy the challenge of capturing all the colors of nature's rainbow - from the intense blue of southwestern skies to the pure white, intermediate pink and brilliant red of the surrounding sandstone. The beauty and contrast of red sandstone, green foliage and unique geologic formations has also attracted movie and television cameras as the backdrop for numerous major motion pictures during the 50's, 60's and 70's.

Molten lava, from several volcanic cones near the head of the canyon, has imprinted the landscape throughout the area's geologic past, covering portions of red sandstone with a black mantle.

There is evidence of archeological remains, pioneer culture and architecture which indicates this beautiful canyon has attracted the interest of human visitors for thousands of years.

## ■ ***Biology - Flora***

The Snow Canyon area represents a convergence of three different biological communities. These include the Mojave Desert, Great Basin Desert and Colorado Plateau. This fact creates an amazing diversity of life within Snow Canyon State Park. During 1996, baseline biological inventories were conducted in Snow Canyon to determine what species are found in the park and what implications this might have for managing the park. The inventory was limited, however, to late season and drought conditions in a single year. Recognizing the limits of the surveys does not invalidate their value but underscores the need for additional biological data upon which to base future decision

making.

Due to the ecotonal nature of Snow Canyon the diversity of plant life is wide. Eight plant communities exist within the park. They are Creosote Bush, Sand Dunes, Sand Sagebrush, Riparian, Shrub Community, Big Sagebrush, Pinyon Juniper Woodlands, and Black Brush. These communities correlate to elevational gradients, geomorphology, geologic formations, and soils.

Park vegetation typical of high-altitude desert species include desert marigold, western pepper grass, prickly pear, phlox, narrow leaf yucca, sacred Datura, Mojave aster, brittle brush, Indian paint brush, sage brush, juniper, black brush, cliffrose, creosote, banana yucca, mesquite, Mormon tea (ephedra), pinion pine, live oak, single leaf ash, desert sage and primrose. Cheatgrass (*Bromus tectorum*) is the predominant exotic plant species found in the park.

Some of the most sensitive species of flora in the park are mosses and lichens. These pioneering organisms are responsible for the production of soil, as they aide in the conversion of rock to soil. In addition to the production of soil, mosses and lichens are also food producers for a number of invertebrates. In this way they play an important part in the overall biotic health of the canyon. These organisms are especially delicate as they cling to rock and branches found in shaded areas. Scraped off easily as people scramble or climb on rocks and trees, these organisms are quick to die. Because of their sensitive nature, special precautions must be taken to insure their survival.

Another unique and fragile ecosystem found in parts of Snow Canyon State Park is cryptogamic soil, characterized by a thin fragile crust made of lichens invading the soil's top layer. A number of species of plants have adapted to live exclusively in cryptogamic soils. This important resource for the biotic community is so sensitive, even a single misplaced footstep will destroy cryptogamic soil for many years.

- ***Biology - Fauna***

Fauna is characterized as the animal communities found in a particular area. All fauna known to

exist in Snow Canyon can be broken down into four main categories of vertebrates, including: Avian, Reptilian, Amphibian and Mammalian.

Sixty-six species of birds are known or suspected to nest within Snow Canyon. Of these, four species known or suspected of nesting within the canyon are listed as special status species. These include the Peregrine Falcon (*Falco peregrinus*) listed as endangered by the U.S. Fish and Wildlife Service, Western Bluebird (*Sialia mexicana*), Crissal Thrasher (*Toxostoma dorsales*), and Loggerhead Shrike (*Lanius ludovicianus*) each listed as sensitive by the Utah Division of Wildlife. Washington County, including Snow Canyon, is also distinct in that it represents both the Northern and Southern limits of some species' breeding range. Birds commonly appearing within the boundaries of the park include Gambols quail (*Callipepla gambelli*), common ravens (*Corvus corax*), various raptors, scrub jays (*Aphelocoma coerulescens*), roadrunners (*Geococcyx californianus*), various songbirds, hummingbirds, great horned owls (*Bubo virginianus*) and golden eagles (*Aquila chrysaetos*).

Snow Canyon State Park provides habitat for an extensive list of mammals supported by this arid landscape including bobcats (*Lynx rufus*), cottontail rabbits (*Sylvilagus auduboni*), coyotes (*Canis latrans*), ringtail cat (*Bassariscus astutus*), mule deer (*Odocoileu hemionus*), gray rock squirrels (*Citellus variegatus*), spotted skunks (*Spilogale putorius*), bats, and white tailed antelope (*Ammospermophilus leucurus*). Merriam's kangaroo rat (*Dipodomys merriami frenatus*) and kit fox (*Vulpes macrotis*) are two species of special concern existing in Snow Canyon State Park as identified by the Utah Division of Wildlife Resources. The park represents the Northernmost elevation zone for these species.

Ancient rock art panels within the park suggest the presence of desert bighorn sheep (*Ovis canadensis ssp*) and mule deer. While bighorn may have disappeared from much of the area, mule deer are still observed along the northern park boundary.

As exotic plants invade native vegetation habitats, the same may be said for animal species. Trap transects did capture a house mouse during mammal sampling near the lava tubes trail head. The

occurrence of this species is indicative of heavy human use and impacts associated with recreation.

Bats are an important mammal occurring within Snow Canyon, with as many as 18 species referred to in inventories. Various areas of the park indicate the area may be used as both a hibernaculum and maternity roost.

Reptiles and amphibians are an important component to the biological community within Snow Canyon. Twenty-two species of reptiles and 6 species of amphibians of which five specific special interest species occur with the park as follows: desert tortoise, chuckwalla, Gila monster, sidewinder, and Utah banded gecko. The desert tortoise is formally listed as a threatened species by the U.S. Fish and Wildlife Service. Most of the park represents tortoise habitat with concomitant restrictions and oversight as required in the Washington County Habitat Conservation Plan. Other reptiles occurring within the park's boundaries include California king snakes, coach whip snakes, gopher snakes and collared lizards.

Baseline inventories completed in 1996 brought to light interesting facts relating to habitat use and species distribution. Seventy eight percent of all survey sign (tracks, scat, individuals, etc) occurred in transition areas. These transition areas, usually located at the base of cliffs, represent different levels of foraging opportunities and cover for various species. Amphibians are particularly reliant on water collection sites and catchment basins.

## ■ ***Cultural***

Snow Canyon's limited and nonrenewable cultural resources include at least twenty-four prehistoric and historic sites within or adjacent to park boundaries. The availability of water, a long growing season and mild winters were key factors in attracting historic and prehistoric populations to the area. However, the mild climate is countered by low precipitation, extreme summer heat, marginal soils and occasional flash floods. These factors combined, created a diverse and challenging environment for early man.

At least four major time periods are reflected in the archeology of Snow Canyon. During the Paleoindian and Archaic - the first two periods - southwestern Utah reflects an occupation by groups of hunters and gatherers who relied on a variety of floral and faunal resources. Little is known about the lifeways of these early inhabitants beyond broad generalities. Native American cultures were encountered in the area by the first Euro-Americans, probably the Spanish led by Fathers Escalante and Dominguez in 1776-77.

At least twelve prehistoric sites have been identified within or adjacent to park boundaries including a rock shelter with petroglyphs, as well as evidence of historic sites. Eleven sites were recommended eligible for the National Register of Historic Places due to their potential to contribute data on research questions concerning the prehistory and history of the region. (Latady 1996).

Other cultural resource inventories have also been conducted within the Park boundaries. Archaeological reconnaissance projects were undertaken along State Highway 18 by archaeologists representing private firms, Universities and the Bureau of Land Management (BLM). Adjacent to the Park boundaries, block inventories have been conducted by the BLM as part of land exchanges with the private sector. (Madsen 1992).

The sites document the use of Snow Canyon by Archaic populations, western Anasazi, ancestral Paiute and historic ranchers. These inventories demonstrate that significant cultural resources are present and probably exist in quantity in the Park.

### ● *Paleontology*

According to Utah State Paleontologist (Gillette, 1997 personal communication) there are no recorded paleontological sites in Snow Canyon State Park. Utah Geological Survey maps indicate

exposures of two sedimentary formations of Mesozoic age containing fossils. These are the Jurassic Navajo Sandstone which elsewhere have "fossil" oases with petrified wood, petrified logs, and dinosaur tracks; and the Jurassic Kayenta Formation, in which dinosaur bones and tracks are found occasionally. For both formations, any occurrence of fossils of any kind will have potential importance to paleontology. The State Paleontologist recommends a reconnaissance survey of the park to determine the likelihood of fossils in these two formations, with follow-up in case of positive results.

### ■ Water

The City of St. George provides all of Snow Canyon State Park's culinary water through the Snow Canyon Water Compact Board with members including the City of St. George, Santa Clara, Ivins Town and Snow Canyon State Park. The St. George City system delivers water approximately 1 mile north of the southern park boundary, then the park's booster pump draws it up to a storage tank where it gravity feeds to the campgrounds and headquarters. Snow Canyon State Park uses approximately 13.5 acre-feet per year of water.

The City of St. George has five wells and the City of Santa Clara has one within the park boundary. The current wells may not meet the needs of the community and there is a desire on the part of the Snow Canyon Water Compact board to drill a new well and re-drill older wells within the canyon. Wells have been located in Snow Canyon State Park because of the flat bottomed gorge cut into the Navajo Sandstone, providing one of the few locations where wells can successfully be drilled into the Navajo Aquifer. Navajo Sandstone, which has been recognized as the best producing bedrock aquifer in Washington County, is well exposed in the park. Where sandstone has been subjected to stresses resulting in the development of moderate to intense jointing and fracturing it becomes a much better aquifer. The ability to transmit and yield water to a well is greatly enhanced by these joints and fractures (Division of Water Resources).

Although more wells have been drilled within the park (some were abandoned due to heaving sands

and low yields due to the absence of fractures), six are currently equipped and producing. It is important to the communities of St. George, Santa Clara and Ivins to be allowed access to the Navajo Aquifer from within Snow Canyon State Park. Future development of the aquifer from within the park should be determined by the state and local entities subject to federal, state and local regulations and subject to the safe yield of the aquifer (additional culinary water needs for the park should be supplied by the City of St. George).

A significant but unresolved issue is whether pumping wells within the park have impacted the park's valued amenities such as sensitive vegetative communities and wildlife. Quantified information is not available to ascertain the level of impact.

## ■ ***Geology***

The geologic history of Snow Canyon State Park dates to the Jurassic periods when the winds dropped their sand content in a cross-bedded pattern. These sands later cemented into stone by a process in which chemicals such as hematite were deposited in precipitation, leaving the rock in different shades of red, pink and white. Millions of years ago, the canyon was uplifted and fractured into the layers of stone which made it possible for erosional patterns to develop. The broad and intricately weathered lacework of red and yellow sandstone turrets, towers and walls over which great streams of lava cascaded during some ancient time, partially filled the canyon from wall to wall. These rivers of basalt hardened as they moved, forming picturesque petrified falls and tremendous masses of broken and twisted cinders. The most recent volcanic activity occurred in Diamond Valley. Two magnificent cones, probably 10,000 years old, stand on the northern perimeter of the park. The larger is a perfect cone, approximately 350 feet tall and 400 feet in diameter with a central crater about 75 feet deep. Since the cones are unmarked by erosion, the relatively "fresh" appearance indicates they are very recent in geologic terms.

Snow Canyon State Park includes a broad, flat-bottomed gorge cut into veri-colored Navajo sandstone, located in a transitional portion of Southwestern Utah between the deserts of the Great

Basin and Range Province to the west, the Colorado Plateau Province to the east and the Mojave Desert to the south.

The peculiar formation of Snow Canyon, with contrasting vermillion cliffs and black lava, is unsurpassed in its stark intensity and beauty. As the Navajo sandstone rocks get progressively younger, their colors change and the cliffs and domes of petrified sand dunes range from brilliant orange-red, orange, yellow, to varying shades of pink, cream and white. Many of the steep faces that bask all day in the sun, are coated with a dark, glossy veneer of minerals, usually manganese oxide in composition. The origin of this coating, called “desert varnish” is somewhat controversial but may have an organic origin.

A wide array of fabric and texture designs enhance the appearance of the sandstone. Time, erosion and other forces have battered it into intensely broken and fractured zones, molded it into smooth rounded hummocks, etching patterns resembling the skin of an alligator onto its surface. An unusually straight canyon, it has been lifted up by crustal forces, tilted northward and badly shattered during the past 200 million years. The action of water and wind have eroded the canyon into strange multi-colored shapes while these same slow, constant natural processes continue to alter the park’s facade.

## ***ISSUES***

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The issues addressed by this plan were identified through public meetings, surveys and focus group meetings. The initial list of 52 issues was refined and expanded by the Planning Team, then grouped into seven (7) categories. Issues relating to Ecosystem Health and Resource Conservation, Education and Interpretation, Land and Property Management, Recreation, Facilities Development,

Neighbor Relations, and Funding/Administration.

Throughout the process, team members considered several questions as they explored options for the future of Snow Canyon State Park: How can we maintain the natural flavor? How can we involve young people? How can users interact without creating conflicts? How are land uses on adjacent properties going to influence the plan? Is there any possibility for continued unlimited use?

Over a period of six months, each of the issues in this section was analyzed, contemplated, pondered, reviewed, studied and examined until a consensus of opinion was reached and recommendations made. Throughout this section, issues and recommendations are grouped by category and explored in narrative representative of the present situation, proposed solutions and rationale for recommendations by the team. For the ease of the reader, complex issues are also summarized in figure boxes at the conclusion of each narrative discussion.

### ■ ***Ecosystem Health and Resource Conservation***

Ecosystem Health and Resource Conservation for Snow Canyon is an important topic. Approximately one half of the canyon is medium to high density tortoise habitat with Snow Canyon State Park managed consistent and in compliance with the intent and purpose of the Washington County Habitat Conservation Plan (HCP).

In addition, there is a need for acquisition of better data regarding sensitive lands in addition to the baseline inventory done in preparation for the planning process. The team identified and mapped sensitive lands as a part of the planning process based on the best biological information available including professional observation and site examination.

Recreation and ecosystem management in Snow Canyon will be based on a sensitivity rating of communities along a five point scale. This scale will help establish limits of acceptable use. Use may range from no use, to seasonal restrictions or party size restriction, to open use throughout the

year.

Managing for ecosystem health will also require the establishment of objective and simple monitoring systems which will provide managers with the opportunity to quantify real impacts and differentiate them from perceived impacts. The actual research will be carried out by students and interns overseen by professional biologists. Park law only allows specimen collecting for educational and research purposes and then, only through a written permit procedure. User group involvement and partnershiping will be done, additionally, to help build support and buy-in to the highest extent possible. Steps in accomplishing the task of improved data relating to ecosystem health are outlined as follows:

1. Obtain historical photos of Snow Canyon to provide data on how it used to look and also provide some indication of changes in the current day.
2. Infrared aerial photographs of the canyon will be taken to document exact vegetative communities and their respective boundaries.
3. Finalize a sensitivity analysis based on aerial photographs for 4 classes of vertebrates; birds, reptiles, amphibians and mammals. Create a GIS database which can visually display recreation uses and resource areas.
4. Overlay recreational activities on sensitivity maps.
5. Identify areas conflicting with sensitive resource areas.
6. Review conflict areas on site with users.
7. Identify and select that option which best preserve sensitive areas while balancing the needs of users.
8. Monitor activities chosen in number 7 relative to impacts and resource conditions.

Ecosystem health and resource conservation balanced with recreational uses within the canyon is a complex task. For example, Riparian and transitional areas at the base of cliffs and slickrock are often sensitive habitats. Transitional habitats are currently experiencing impacts as a result of climbing and hiking use. This area and others will be evaluated through use of the aforementioned strategy. Some changes in use and recreation may occur but decisions made will include user groups

prior to implementation.

No plant species of special concern have been documented in vegetation surveys, however annual plants were restricted during sample times due to drought conditions. Additional plant inventories will be conducted at Snow Canyon in wetter years and during blooming periods. Park managers should establish contact with interested groups such as educational institutions or the Utah Native Plant Society as discussed in this document to help conduct surveys and coordinate inventories in cooperation with the Utah Division of Wildlife Resources, Natural Heritage Program. Non-native vegetation which is determined to be detrimental to the biotic health of the park, as articulated in the vision elements, will be managed to reduce the negative influence as park resources allow. The primary exotic vegetation species occurring in the park are cheatgrass (*Bromus tectorum*) and Russian thistle (*Salsola pestifer*).

Cultural resources conservation in the park should be managed in a way to protect and preserve the prehistoric, historic and paleontology sites while providing educational opportunities for visitors. Other decisions with regard to cultural resources in the park include:

1. Continue to pursue the Division's policy of avoidance of cultural resources, especially in cases where human remains may occur.
2. Complete a systematic survey of Snow Canyon to provide a clear picture of the cultural resources in the park in cooperation and consultation with SHPO.
3. Formally consult with Native American tribes including the Southern Paiutes, Kaibab-Paiute and Hopi to determine significance of cultural resources in SCSP.
4. Monitor and protect known cultural sites from vandalism and unauthorized collection.
5. Manage site near Winter Quarters Trail to minimize vandalism and trampling while encouraging interpretation of the site if resources allow.
6. Interpret site containing two rock shelters in association with the Hidden Pinyon trail while mitigating impacts to the site to increase public awareness, consistent with recommendations cited in Latady 1995. (Fence, detailed systematic collection, and map)

7. Develop partnerships with universities to complete inventories and possibly archaeological excavations to better identify, manage, protect and interpret all cultural resources within the park.
8. Establish, maintain and update a database containing cultural resource site information at the park level.
9. Establish a repository for excavated materials at Iron Mission State Park or the proposed Snow Canyon Nature Center.
10. Coordinate cultural resource work in Snow Canyon with the Santa Clara Reserve and other cultural resource activities in the area.

***In Summary . . . IDENTIFICATION AND MANAGEMENT OF SENSITIVE AREAS***

Present condition - Baseline data has been collected which identifies some areas of sensitivity as it relates to cultural and biological resources. As part of the Red Cliffs Desert Reserve (RCDR), areas of critical habitat have also been identified. Any development or management decision which has an impact on this habitat must be implemented in consultation with the RCDR.

Proposed solution - Further identify sensitive areas, manage all development or uses of the park in a way that insures minimum impact to sensitive area. This would include a cultural resource clearance and biological consultation with RCDR before any development or use which might impact sensitive area proceeds. Biologically sensitive areas will be based on a sensitivity scale which will identify extremely sensitive areas where management policies may range from no use or very restricted use to year round use on established trails or seasonal closures.

***In Summary . . . IDENTIFICATION AND MANAGEMENT OF SENSITIVE AREAS (con't.)***

Reason - As stewards for all resources within the park and where the park is part of Zone II of the RCDR it is extremely important that all management decisions are sensitive to park resources, especially in fragile and sensitive areas.

***In Summary . . . MONITORING BIOLOGICAL HEALTH OF THE PARK***

Present condition - Limited biological data is available on the health of the park.

Proposed solution - Establish past data through the use of historic photographs and using aerial photos of the canyon. Establish a present baseline to compare future impacts against. Establish a simple and objective monitoring system to quantify real impacts as compared to perceived impacts. This could be accomplished using volunteer college and high school students led by a professional biologist.

Reason - There is a need to protect the biological health of the park. There are many perceived threats to that health that may or may not be actual threats. A monitoring system will identify actual threats and help to make management decisions that will protect that biological health.

***In Summary . . . HABITAT CONSERVATION PLAN CONSTRAINTS***

Present Condition - Most of Snow Canyon State Park is included in Zone II of the Red Cliffs Desert Reserve. All uses in the RCDR are carefully evaluated for impacts to the desert tortoise and other wildlife.

Proposed Solution - Involve RCDR in all decisions which involve any ideas of the reserve.

Reason - Legal and ethical needs to protect habitat and species as spelled out in the Conservation Plan.

● ***Education and Interpretation***

Snow Canyon State Park has the potential to be a tremendous educational resource. A unique blend of geology and climate has created habitat for a wide assortment of plants and animals. The biodiversity is exceptional. Mild winters and comfortable temperatures in fall and spring make the park ideal for student visits during the traditional school year.

In the past, student visits to the park have been more recreational than educational. While the park will continue to provide recreational opportunities for people of all ages, it is hoped a strong educational component can also be added. Curriculum designed to take advantage of this resource will be developed and implemented as soon as possible.

Snow Canyon is both a wonderful classroom and an exceptional outdoor laboratory for the local college and university. Dixie College favors a data collection center and/or the development of a Visitor/Education Center. Southern Utah University sees Snow Canyon as an opportunity for partnership and student internships as well as senior projects for biology teaching majors. As an educational institution, SUU is moving quickly into a well respected undergraduate research school training students to become researchers. Leadership on the Cedar City campus has expressed willingness to provide scientists and 2-3 undergraduate students to provide impact monitoring and interpretive information through research; conduct a census of plant life in the canyon and help with fundraising for the construction of a Visitor/Education Center. SUU considers the canyon a great asset to their travel and tourism curriculum, for the study of geology and recreation and as inspiration for English and fine arts majors.

Snow Canyon State Park should make providing and accommodating educational experiences a high priority. A “Snow Canyon Education Committee” will be organized by park personnel for the purpose of adopting and implementing a curriculum. The committee should include representatives from State Parks, Washington County School District, Dixie College, Southern Utah University, and the public. This committee would oversee all educational activities within the park. They would be responsible for the development of guidelines and limitations with respect to those various educational activities for people of all ages, without jeopardizing the ecological health of the Park.

Educational opportunities provided at Snow Canyon State Park should include, but not be limited to:

- Guided nature hikes for school classes and other similar groups
- Regularly scheduled public interpretive activities
- Regularly hosted guest lectures for the public
- Establishment and upkeep of interpretive trails

- Production and distribution of instructional brochures
- Outdoor/indoor interpretive displays and/or exhibits

Snow Canyon State Park should be available to, and provide guidelines for, the following educational activities:

- Teacher hosted field trips
- Field research labs and projects
- Delivery of grade appropriate curriculum

To aide in meeting the educational objectives of the park, a docent program would be established involving people of all ages though such a program would particularly encourage the involvement of students. A partnership with an organization such as the Washington County Retired and Senior Volunteer Program or the local Volunteer Center to identify potential volunteers should be sought in helping to meet this objective. Such a partnership would be mutually beneficial.

***In Summary . . . RELATIONSHIPS WITH SCHOOLS***

Present Situation - Snow Canyon offers ranger guided activities to schools with advanced scheduling. The park employees also do outreach programs in the schools. Schools are welcome into the park for education purposes with no charge. Universities visit the park as a field trip part of their courses. Local public school visits are more of a recreational experience than an educational experience. No formal agreement has been established between the park and any educational system.

Proposed Solution - The park assigns a staff member as an education coordinator who works with local higher and public education systems to establish a plan and curriculum to use the resources of the park in all appropriate local education experiences. This should be formalized through a Memorandum of Understanding and guided by a formal advisory group established by the park.

Reason - Snow Canyon resources can offer an excellent outdoor education experience which is not, at present, being well utilized. There is a need to develop an awareness of resources to encourage visitors to protect the sensitive nature of the park.

### ***In Summary . . . INTERPRETATION***

Present Situation - At present, the interpretive effort at Snow Canyon is minimal and consists of a few static outdoor exhibits and printed guides, sporadic campfire programs and ranger contact person-to-person information.

Proposed Solution - An interpretive plan will be written which incorporates additional interpretive trails, visitor center exhibits and uses specific brochures. The plan will also establish formal ongoing staffed interpretive efforts such as campfire programs and guided walks. These efforts will be staffed by volunteers from the community and school systems as well as Division personnel from Snow Canyon and other state parks. Other state and federal agencies will also be requested to assist in this effort.

Reason - What people understand, they appreciate, and what they appreciate, they care for and protect. The least painful, most cost effective and enjoyable way to change behavior is through interpretive efforts. Help people understand the resources of the park not only for the protection of the resources but also for the safety of the visitors.

### ***■ Land and Property Management***

Land and property are important issues in the future of Snow Canyon and Washington County as a whole. Currently, land use in the Washington County area continues to move toward more development. As previously discussed in association with the community profile, the cities of Ivins, Santa Clara and St. George continue to attract more people to the community, reducing habitat for

wildlife and creating greater demand for outdoor recreation.

In addition, development outside of Snow Canyon State Park continues to increase. Winchester Hills and Diamond Valley, both east of the park, are quickly becoming suburbs to St. George in their own right. The Town of Ivins is literally at the doorstep of the park and thousands of people each year walk from their door at the Franklin Covey Institute of Fitness and through the canyon.

Each of the aforementioned factors place pressure on the limited area of Snow Canyon. The park is currently approximately 6,000 acres. Public meetings held throughout the process identified the size of the park as a weakness; meaning the public believes the park is too small. Support for expanding the size of the park was expressed in the on-site user survey conducted in 1997 by the Dixie Business Alliance. Statewide there is public support for acquisition of new lands for state parks. A 1995 telephone survey, conducted by the Institute of Outdoor Recreation and Tourism at Utah State University, showed that an average of 75% of those surveyed supported acquisition of land for new state parks or expanding existing parks.

With the growth of Washington County's population and increasing tourist visitation in the park, expansion of the land base of Snow Canyon State Park will lessen impact and help meet the needs of a growing number of visitors. Expansion of Snow Canyon State Park by realigning irregular boundaries will also enhance recreation opportunities and ease management concerns. Other values are also gained from realignment of the park boundary or expansion of management influence. These include protection of scenic values and wildlife habitat, including desert tortoise. Currently, private property overlooks the park where private development could occur on the canyon rim with no control or protection of the viewshed.

Redefining the park's boundaries and borders to secure values like those discussed is important. This will occur through the purchase, trade, donations, and partnerships to fund property issues. Currently, the Division of Parks and Recreation is pursuing a land trade with the Gubler family to secure public access into Johnson Arch. In return the Division would give property on the East side of Highway 18. This property is of lower importance recreationally and is more difficult to manage

as it is outside the canyon.

Priorities for land acquisition are outlined on Map #1 (under Section 9 - Tables and Maps). Each of these parcels will provide greater security to canyon resources and will be managed consistent with the vision for the park. In addition to the acquisition of land is the opportunity to manage property without holding title to it. This may be the case with the Red Mountain Wilderness Study Area, currently managed by the Bureau of Land Management. This would be desirable for visitors since the area is already accessed through the park. Management of Red Mountain WSA would provide consistent, single agency management of recreation. If successful in the pursuit of this agreement with the BLM, the Division would be required to manage the area consistent with wilderness values as identified in the 1964 Wilderness Act. This would also provide an opportunity for the park to manage backcountry camping. There is demand for this activity but current park size provides no opportunity. In addition, the BLM may be willing to pursue a joint management agreement due to their limited staff.

School trust lands, administered by Trust Lands Administration, are located immediately adjacent to park lands at West Canyon, an inholding within the park and on property on the East Rim, in the view shed of the majority of the park (see Map #2 in Section 9 - Tables and Maps) This land would be valuable to Snow Canyon State Park as a way to increase park acreage and as a long term investment in education. School trust lands are in areas important to the protection of the park experience. The greatest concern is the area located within Section 16 of Township 41S, Range 16W. Acquisition of the NW corner of this section will be pursued through whatever methods available.

An independent agency of state government, Trust Lands Administration is not part of any other department. It is overseen by a seven-member Board of Trustees appointed by the Governor from lists of nominees provided by the trust beneficiaries. The purpose of the agency is to manage Utah's school and institutional land grants. At statehood, Utah, like all other states admitted to the union after 1795, received grants of land for the support of schools and other public institutions. These lands are to be managed as a trust, with a mandate to administer the assets of the trust for the sole

purpose of providing support for the beneficiaries.

Four sections in every township (Sections 2, 16, 32 and 36) were granted for the support of common schools. Common schools have been defined most recently to include K-12. In those areas where all or part of the four sections were already appropriated for some other use, the state received credit to select an equivalent value of land elsewhere. The original grant was approximately 6.6 million acres. Presently there remains 3,580,612.87 acres in state ownership.

***In Summary . . . ADJACENT PUBLIC LANDS***

Present condition - Some trail and recreation use extends out of Snow Canyon State Park onto public lands managed by BLM. No on-the-ground presence occurs on those lands to manage the use or to develop the recreation potential.

Proposed solution - Consider a cooperative management agreement with BLM to transfer management of recreation to the Division of Parks and Recreation on selected public lands to the north and west of Snow Canyon State Park. Acquire school trust lands in the NW quarter of Section 16 of Township 41S, Range 16W through whatever means are available to protect the park experience.

Reason - Joint management of adjacent public lands would provide for expanded recreation use to meet growing public demand. It would provide increased visitor management and resource protection while reducing costs and redundant agency staffing.

***JOHNSON CANYON***

Access to Johnson Canyon was closed in 1994 by the private landowner due to liability concerns. Snow Canyon State is negotiating for the property and it is hoped this biologically rich and scenic canyon will soon be part of the park. Johnson Canyon, unlike any other area of the park, benefits from the perennial flow of water and is considered extremely sensitive because it is associated with an established overstory riparian community. Because of the biological significance of Johnson Canyon, all use of the canyon will be strictly controlled.

Climbers have a stated interest in accessing a few existing high-quality climbs within Johnson Canyon. To accommodate this use, the canyon will be open to a limited number of climbers on existing routes only during the winter months, from November 15 to March 1 annually. This window of access reduces impact to the Mojave Desert Tortoise and other reptiles which hibernate during this period, as well as reducing impacts on unique species that breed in or near the riparian habitat. Raptors are not as vulnerable before beginning nesting behavior in March. The winter months are also dormant months for fragile forbes and other vegetation critical to wildlife.

Registration will be required prior to climbing in Johnson Canyon during the three months it is open, and only a limited number of permits will be issued. If monitoring the condition of the canyon indicates there are either (1) significant additional biological concerns, (2) non-compliance with seasonal restrictions, (3) user conflicts or (4) aesthetic concerns, a total closure of Johnson Canyon to all uses will be considered. For more information, contact the park.

### ***In Summary . . . JOHNSON CANYON***

Present condition - The canyon was closed to public use by the private landowner in 1994. Utah State Park's is currently negotiating to bring this extremely sensitive canyon into the boundaries of the park. The ecosystem within Johnson Canyon benefits from a perennial flow of water. A few high quality and challenging rock climbs exist within the canyon. Climbing on the arch is prohibited year round.

Proposed solution - Seasonal access to Johnson Canyon will be limited to the period of November 15 - March 1 with authorization or on guided walks. The year-round no climbing policy on Johnson Arch will continue in force.

Reason - Limited during the hibernation period of the desert tortoise will reduce impacts on unique species which breed in or near the riparian habitat, vegetation critical to wildlife and fragile forbes.

### ***In Summary . . . ADJACENT PRIVATE LANDS***

Present Situation - The south and east boundaries of the park are private lands which could be developed into commercial or residential areas. Some of the lands are within the HCP and probably could not be developed. The park is in the process of making a land trade with the Gubler family to acquire lands at the mouth of Snow Canyon near Johnson Arch. Several other areas of private land have been identified as desirable to be part of the park including acreage owned by Brooks Pace, Thorley Cattle Company and Gardner family on the East Rim (see Map #2 in Section 9 - Tables and Maps).

Proposed Solution - Continue to pursue the trade with the Gubler family. Develop a partnership for the purchase of property owned by Brooks Pace and Thorley Cattle Company. Encourage or allow uses on private lands (i.e., golf course, hiking trails, etc.) which promote recreation but do not threaten the integrity of the park or its viewshed. Complete the loop trail connecting Paradise Canyon to the south end of the park, then to West Canyon day use area and on to Winter Quarters following existing drainage.

Reason - Needs to allow for expansion of property base to accommodate the growing use of Snow Canyon. Much of the area at the mouth of Snow Canyon is habitat for endangered species. As such, it is not available for development, but should become part of Snow Canyon for ease of management. Gubler and Thorley property allows for an area to provide an education or nature center without major impacts on the park or the areas of critical habitat. The east rim property could be developed with proper setback for viewshed protection.

### ***In Summary . . . MANAGEMENT OF PARADISE CANYON***

Present condition - Paradise Canyon is a part of Zone II of the RCDR. Most of the canyon is now privately owned. The BLM is in the process of trying to acquire ownership. Early in the HCP process there was an interest expressed by the local officials that the canyon should be part of the State Park. There is a concern that if the BLM is successful in acquiring the property that they may not be able to transfer it to the state.

Proposed solution - Pursue a cooperative management agreement with BLM to transfer management of recreation on public lands in Paradise Canyon to Snow Canyon State Park.

Reason - Because of its location, Paradise Canyon is most effectively managed out of Snow Canyon State Park. Such would be consistent with the terms of the HCP and would reduce costs and simplify management.

### ***In Summary . . . PROTECTION OF VIEW SHED***

Present condition - Residential and commercial development is rapidly approaching the east rim of Snow Canyon and the southern entrance or mouth of Snow Canyon. Much of this property is private property and prime for development.

Proposed solution - Acquire property at mouth of canyon and east rim to protect view shed. Also, negotiate with landowners for development set backs along the east rim to protect the view shed from the canyon bottom.

Reason - One of the main public values identified through public meetings was to protect the views within the park. The property at the mouth of the canyon is within the Red Cliffs Desert Reserve. The landowners on the east rim are willing to help through land trades and set back agreements to protect the view shed.

### ***< Recreation***

Recreational demand in Snow Canyon continues to increase. Visitation is currently approaching three quarters of a million annually. This demand for recreation in Washington County and specifically Snow Canyon is truly a double edged sword. On one side is the enhanced quality of life Snow Canyon provides, the economic contribution to the community, the proximity to neighborhoods, and a variety of other benefits. On the other side, as Snow Canyon has continued to grow in popularity, management has become more visible. Various restrictions have been enacted on behavior and activities to protect the safety of visitors and integrity of natural, cultural and physical resources. Management intensity is often based on a variety of influences but primarily they are balanced around total demand, impact to the resources, threats to public health and safety, and resource limits of staff (money, personnel, etc.) to adequately address each of the above

influences.

Recreation activities change in popularity and a number of activities. Risk management relating to public safety is a significant concern. In our litigious society, agencies have not only a duty to warn visitors but also to restrict and prohibit uses which may jeopardize public safety.

As stewards of resources in Snow Canyon State Park, managers are responsible for managing recreational use to minimize impacts. In many cases this translates into use restrictions. (For instance, there is no off-highway vehicle use allowed in the park, part of the Red Cliffs Desert Reserve). It may also require physical development to reduce impacts.

Snow Canyon is popular to visitors for many reasons though their activities in the park may conflict with each other or may not be appropriate in all areas of the canyon. The team agrees with public sentiment that traditional forms of recreation should continue, but all activities should consider possible conflicts and be managed in a way to protect resources of the park, including endangered species habitat protected by the Red Cliffs Desert Reserve, consistent with current park policy. (All forms of recreation will be limited in certain areas of the park by seasonal closure due to impacts on endangered or threatened species in those areas).

### ***In Summary . . . PICNICKING***

Present Condition - Picnic facilities are located in 3 areas within the park. 1) Campground area, 2) Old residence area, and 3) Galoot area. Additional picnicking takes place throughout the park in areas where no facilities exist; however, it is discouraged.

Proposed solution - Provide for expanded picnic opportunities at the Galoot area, provide group picnicking opportunities at old residence area, provide road side parking to west of campground lawn area for picnickers. Team members are supportive of the concept of additional picnic tables, but agreed there should be no gazebos or like structures which conflict with the scenic beauty of the park. Provide picnic facilities at dunes in area of present concession operation. Picnicking will be discouraged in all other areas of the park.

Reason - The major need of the park is for day use opportunities. Picnicking is one of the major day use activities. The picnic areas can also serve as staging areas for other day use activities. Expanded day use opportunities is a high priority of this plan.

CAMPING in the park is a complex issue which the team also discussed at some length. The 1992 Statewide Comprehensive Outdoor Recreation Plan (SCORP) identified camping facilities as the #1 development need. In addition, camping in Snow Canyon is an important activity for non-local visitors. Conversely, there is concern regarding both the number of campers and the demand for more day-use area. As the park serves more visitors, there is demand for more facilities. Visit lengths are varied in the park with day-use being the primary activity associated with any number of recreational activities. Camping stay lengths are one method of managing demand. By reducing stay length, there is greater turnover in campsites and therefore greater opportunity for more campers to use the park. The stay length at Snow canyon has traditionally been 14 days. The recommended stay length is to be 5 days. This will cover all holiday weekend lengths and will cover the length of most stays. Only those who traditionally stay longer will be inconvenienced.

In addition, day use is expected to experience continual growth. At the same time, Snow Canyon is extremely sensitive to substantial development. With this in mind, there will be no expansion of the campground. It is also possible that in the next century, camping in the park be phased out to better serve visitors to Snow Canyon.

### ***In Summary . . . OVERNIGHT CAMPING***

Present Condition - Camping is allowed in the developed campground and primitive camping has been allowed in the Galoot area to accommodate overflows.

Proposed solution - For the present, continue to allow camping in the developed campground area, but decrease the length of stay from 14 days to 5 days, and provide no overflow camping. The number of campsites should remain constant with no new development. In the future, camping may be phased out as day use demands on the park increase. The possibility of moving camping off park will result in opportunities for camping to be provided by a private campground or federal agency, in areas near park boundaries.

Reason - Camping facilities and resources need to be made available to more people. Shortening the length of stay would make camping opportunities available to more people. Overflow area is needed to meet present day use demands. Possible future use of camping area for day use would make that area available to more visitors.

***In Summary . . . BACK COUNTRY CAMPING***

Present Condition - Camping has been allowed in the Three Ponds area for the concession guests; however, the use has been low and the satisfaction level of concession guests has also been low.

Proposed solution - No back country camping will be allowed within the present park. Those wishing to camp in the Red Mountain Wilderness Study Area (WSA) will be referred to BLM. If a management agreement is out into place with BLM, then the park would manage back country camping in that area.

Reason - Removal of concession would eliminate the park back country camping need. To accommodate those wishing a backpacking experience, the WSA would offer a much better experience. Snow Canyon is so small it does not have room to offer the typical back country camping experience.

***In Summary . . . SCENIC DRIVING***

Present condition - The road through Snow Canyon offers an excellent and highly used scenic drive. The same roadway is used by walkers, bicycles and community through traffic. Scenic driving experiences can be accessed from north to south and from south to north.

Proposed solution - Scenic driving will still be a major use activity of Snow Canyon with a trail developed to accommodate bicycles and walkers. Scenic driving will be allowed throughout the park, although travel patterns will be altered by the recommendation to allow two way traffic from the south entrance to the Galoot day use area, then one-way only in a south to north direction from Galoot to Hwy. 18.

Reason - Commuter through traffic traveling downhill tends to encourage faster travel. Conversely, traffic heading uphill through the park will naturally slow down. Excess speed and increasing traffic through Snow Canyon create safety concerns for bicycles, walkers and scenic drivers. Although vehicles through the park today average only about 750 a day, the projected ADT is expected to be 11,000 in twenty years. Slower uphill driving will allow safer use of the road by bicycles and walkers on the same roadway with those on scenic driving tours.

## ● *Equestrian Use*

The team determined it was important to develop an equestrian management plan to balance the needs and concerns of equestrians, a prominent recreational user group in the park, with reasonable management of equestrian impacts to the sensitive desert ecosystem. To demonstrate the park's interest in working cooperatively with equestrians, it was decided an equestrian management plan should be developed and adopted concurrently with the resource management plan. Recommendations developed by local equestrians are the basis for many of the management actions outlined. Special acknowledgment is given to the Backcountry Horsemen of Washington County who remained very committed throughout the entire planning process.

For more information, please refer to the full text of the Equestrian Management Plan included in the Appendix A and Equestrian Map in Section 9 - Tables and Maps.

Horseback riding in Snow Canyon is a historic use, and story tellers claim this use dates back prior to documented pioneer times to the era of the Spanish explorers. Retaining access to riding in the park is very important to the community as evidenced by their regular participation at planning meetings and the passion with which their message was delivered to the planning team. While concern for horse-related impacts in Snow Canyon State Park led park managers to consider possible restrictions to minimize damage to the park's fragile resources, park officials would prefer to utilize cooperative partnerships and education to minimize impacts to the greatest extent possible.

The purpose of the equestrian management plan is to identify impacts resulting from equestrian use in Snow Canyon State Park. The equestrian plan also identifies reasonable means to reduce or eliminate these impacts to assure the long-term protection of park resources and values, and retention of the overall visitor experience. The management of Snow Canyon State Park considers the long-term partnership with horse users and others in the recreational and environmental communities to be a critical component of an effective equestrian management program.

To achieve the equestrian goal to provide a cooperative management scheme which allows for continued enjoyment while protecting the natural, historic and scenic resources in Snow Canyon State Park, the following objectives have been identified:

1. Identify the key issues relating from equestrian use of Snow Canyon State Park.
2. Determine the potential impact of equestrian use on (a) threatened or endangered species or other wildlife, especially raptors, bats and desert tortoise; and (b) sensitive areas where there is comparatively greater biodiversity.
3. Develop management guidelines for horse use in Snow Canyon State Park necessary to minimize impacts to the natural, historical and scenic resources of the park, including but not limited to:
  - consideration of closures in highly sensitive areas to protect wildlife;
  - establish an equestrian registration program, for the purpose of developing a horse user's mailing list and for monitoring horse activities in the park;
  - identify designated horse use trails;
  - identify designated parking areas; and
  - plan for the signage and maintenance of designated equestrian trails
4. Ensure equestrian educational or interpretive programs address natural, historical and scenic resource protection in the park.

***In Summary . . . EQUESTRIAN USES***

Present condition - Equestrian activities are limited to the concession operation and some riders who access the canyon from Ivins area to the south and from Winchester Hills from the north.

Proposed solution - Activities will address the needs expressed to the team by equestrian

users. There will be thru- access to the park. Riding will be available in West Canyon and to the Three Ponds area (See Appendix A). The plan also encourages a trail link from the mouth of Snow Canyon through Paradise Canyon to the east rim and from the north end of the park to the Red Mountain (WSA).

Reason - Although there are some perceived conflicts between horses and other park users and additional perceived impact on park resources, horse riding is recognized as a traditional and valid use within the park and needs to be accommodated.

### ● ***Technical Rock Climbing***

The team determined it was important to develop a climbing management plan to balance the needs and concerns of the rock climbing community, a prominent recreational user group in the park, with reasonable management of climbing impacts to the sensitive desert ecosystem. To demonstrate the park's interest in working cooperatively with climbers, it was decided the climbing management plan should be developed and adopted concurrently with the resource management plan. The climbing

community has worked cooperatively for three years with park officials to develop fixed anchor guidelines allowing for the removal of bolting restrictions in force since 1994. Recommendations developed by the local climbers are the basis for many of the management actions outlined in this plan. Additional assistance and input in the development of the climbing management plan was received from the Access Fund, a national climbing association dedicated to keeping climbing areas open and conserving the climbing environment.

For more information, please refer to the full text of the Climbing Management Plan included in the Appendix B and Climbing Routes Map in Section 9 - Tables and Maps.

Technical rock climbing has been allowed in Snow Canyon for several years despite a regulation (R651-622) which prohibited technical climbing without a permit. Concern for climbing-related

impacts in Snow Canyon State Park led park managers to place a ban on the placement of new fixed anchors in 1994. This concerned area climbers because it restricted the replacement of older and unsafe bolts, and because it curtailed the development of new climbing routes.

Park officials - reacting to a rapid increase in visitation, increasing concerns for the fragile biodiversity of the canyon, and the presence of rare, threatened or endangered species - decided to restrict the placement of new fixed anchors until they could improve their understanding of, and develop a management plan for, climbing-related impacts.

The purpose of the climbing management plan is to identify impacts resulting from climbing in Snow Canyon State Park. The climbing management plan also identifies reasonable means to reduce or eliminate these impacts to assure the long-term protection of park resources and values, and retention of the overall visitor experience.

The overriding goal of the climbing plan is to provide a cooperative management scheme which allows for the continued enjoyment of rock climbing, yet protects the natural, historical, and scenic resources in Snow Canyon State Park.

The development of the Climbing Management Plan, subsequent implementation and future revision are intended to provide a forum for public involvement and collaboration. The management of Snow Canyon State Park considers the long-term partnership with climbers and others in the recreational and environmental communities to be a critical component in an effective climbing management program.

To achieve this goal, the following objectives have been identified:

1. Identify the key issues resulting from climbing use in Snow Canyon State Park.
2. Determine the potential impact of climbing on (a) threatened and endangered species or other wildlife, especially raptors, bats and desert tortoise; and (b) sensitive areas where there is comparatively greater biodiversity.
3. Develop management guidelines for climbing use in Snow Canyon State Park necessary to ensure natural, historical and scenic resources are not degraded

significantly, including but not limited to:

- the use of a zoning scheme, or other climbing density/impact management tool;
  - consideration of closures in highly sensitive areas to protect wildlife;
  - establish a climbing advisory team and a route development protocol;
  - identify designated parking area; and
4. Ensure climbing educational and interpretive programs address natural, historical and scenic resource protection in the park.

The Utah Department of Parks and Recreation recognizes climbing poses personal risk to the participants and climbers bear the sole responsibility for their own safety while pursuing the activity. It is not the intent of this plan, nor of the implementation of any climbing management program at the park, to attempt to judge or physically control safety as it relates to rock climbing, rock climbing equipment, or conditions present on any climbing routes within the park. Management does have the authority, however, to close areas to the public due to specific hazardous circumstances.

### ***In Summary . . . ROCK CLIMBING***

Present condition - There is a substantial amount of rock climbing use in the park. A moratorium on established new routes has been in place for 3 years. There are approximately 180 routes now established in Snow Canyon. There is an active and supportive group of rock climbers interested in assisting in the management of the rock climbing activities within the park.

Proposed solution - Rock climbing will be allowed to continue in certain areas of the park and some controlled new route development will be allowed. A rock climbing management plan will be developed and implemented immediately (See Appendix B).

Reason - Snow Canyon offers a unique rock climbing experience and is a legitimate form of recreation which, with certain controls, can take place in Snow Canyon with a minimal impact on the park resources and other visitors.

### ***In Summary . . . SPORT RAPPELLING***

Present condition - Limited amount of use is taking place in a few specific areas where good anchor points are available and reasonably easy access can be made from the cliff bottom to cliff top without technical equipment or skills.

Proposed solution - Sport Rappelling will be restricted to one or two areas which will provide the needed access and anchors. These areas will be located where the impact to park resources will be minimized.

Reason - Demonstrated need is low and there are very few areas which meet the needs of the rappelling users in a reasonably safe way within the park. There is also concern anchoring to natural features and indiscriminate bolting.

### ***In Summary . . . SCRAMBLING***

Present condition - This is the most dangerous activity taking place in Snow Canyon, but visitors are not restricted from scrambling on any of the features in the park.

Proposed solution - Scrambling will only be allowed where established trails connect with slick rock. Interpretive efforts will cover the high danger of this activity and try to discourage scrambling.

Reason - Scrambling is a favored activity of many of the park visitors and can be safe if visitor uses

caution. Scrambling has resulted in several deaths and many serious accidents to park visitors when caution was not used. Scramblers are responsible for development of many unauthorized trails causing destruction of the vegetation as they access slick rock in no established trail areas.

HIKING is a popular activity at Snow Canyon State Park, allowed on all established trails in the park. There has been a great deal of unstructured and indiscriminate hiking taking place which has created many trails lacing through the park causing damage to vegetation. However, hiking is considered an acceptable activity for the future.

Hiking should continue to be the favored visitor use activity but the past damage done by indiscriminate hiking must be eliminated to protect the biological resources of the park. The proposed recommendation is to allow hiking only on established trails. Popular trails will be defined and hardened. Some cross country, rock travel and free traverse areas are likely, but the majority of use will be on designated trails. Pedestrian access in Johnson Canyon during the period from November 15 to March 1.

Due to the sandy conditions of the park, BIKING is confined to roads in the main canyon and West Canyon. Road biking is considered a safety risk and hard to control in competition with motorized vehicles and pedestrians, though it should continue as an acceptable recreational activity in West Canyon. The team recommends moving bicycling from the canyon road to a proposed bicycle and hiking trail which connect the trail at the north end of the park which runs parallel to Hwy. 18 with the Ivins trail at south end of park.

Snow Canyon is largely considered too sandy for mountain bikes. Such activity should not be allowed on the rocks but mountain biking could work where trails are wide enough to accommodate both bikes and walkers. The plan might provide for one mountain bike trail, perhaps in West Canyon.

SKATEBOARDING/ROLLER BLADING is permitted on paved trails in designated areas only.

No landing, no launching, no take offs of ULTRA LIGHTS are permitted in the park. HANG GLIDERS are allowed by special use permit only and must meet U. S. Hang Gliding Association certification. HOT AIR BALLOONING has been allowed with some minor impact. Future opportunities for ballooning may be by special use permit only and in limited numbers. Organized land take offs with walk out only for chase crews. DUNE SKIMMING happens infrequently. The team agreed to address this issue if it becomes a problem.

Other recreational activities which may become popular in the future will be dealt with as the need arises and will be controlled to lessen impacts to other users and values established in this plan.

### ● ***Facilities Development***

Limited, tasteful development of facilities in Snow Canyon State Park has been an issue of much discussion and concern throughout the planning process. While increasing and improving some facilities are necessary for the comfort and enhanced experience of visitors to the park, such development must be limited to reduce the impact on the environment and the viewshed. The team determined early in the process some form of commercialism (restaurant, museum, research facility, theater or gift shop) is necessary for the ongoing operation of the park. Though the order of this list does not necessarily reflect priorities, initial development will include:

1. Restrooms will include a pit toilet in West Canyon to protect the aquifer and provide service to recreationists. Flush facilities will be established at the Sand Dunes and Galoot with expanded day-use parking.
2. Picnic tables near parking will be available at day-use areas. The issue of shaded structures was debated. The majority preferred natural shading, possibly through vegetation.
3. Curb and gutter for controlling traffic pull-off will be completed throughout the park. There is a consensus on the issue of providing trails through the canyon to connect U18 with the trail which dead ends at the southern entrance of the park.
4. The Sand Dunes will have a water trough and hitching rail and bike racks will be available at each parking area.

5. Visitor/Education Center will go on East side of road to collect fees by way of proper traffic routing.

Day use limits and park capacity are concerns for users as evidenced by public comment and survey results. Overcrowding of park facilities is one of the few major concerns expressed by visitors. This observation is underscored by the fact that survey respondents also feel the park should better manage natural resources and visitor impacts. The charge is clearly articulated that this is the Division's responsibility. Currently, limits for the park will be dictated by physical development. Specifically, parking places will be limited and allowed in designated areas only. When spaces are full, visitors will not be allowed to park along roadsides. For Washington County residents, this will be easier to understand as residents can tailor the timing of their visits to avoid congestion. Out-of-area tourists to the park, however, may be inconvenienced during busy periods.

Should these methods prove unsuccessful, management may turn toward more restrictive techniques for managing use, such as a shuttle. This shuttle may be operated as a concession or a partnership with local businesses, similar to the Zion National Park prototype.

Entry booths, perhaps at both entrances, will help control visitation and give management an opportunity to disseminate information relating to recreation activities and public safety. While entrance booths represent guard houses, they are an important part of managing vehicular access, and providing visitor information and far more desirable than the current methods of collecting fees through parking lot checks and traveling to the administrative office to pay a use fee.

### ***In Summary . . . DAY USE LIMITS***

Present condition - There is no procedure to control the number of visitors using the park at any one time. Vehicles park along the roadsides to access the recreational opportunities within the park. This causes unsafe conditions and natural resource damage.

Proposed solution - Number of visitors can be controlled through information at entry booths. Maximum use numbers will be established to protect both park resources and visitor experiences. Establish hardened parking spaces and place curbing along roadway through the park. This will limit the number of vehicles stopping in the park based on the number of available parking spaces. Parking will be allowed only in designated areas with no

parking along the roadway.

Reason - This will protect the park resources and visitor experiences with a simple understandable, easy to manage system. With present perceived over capacity on some holiday weekends and the rapidly expanding use of Snow Canyon it is necessary to look at controlling numbers using the park.

### ***In Summary . . . WEST CANYON USES***

Present condition - West Canyon now has a gravel road which is used as a service and recreational access road only. The canyon has 6 water wells and associated infrastructures. Recreational activities include hiking, horse riding, limited rock climbing and some mountain biking. No conflicts have been identified.

Proposed solution - Allow present uses, add a vault type toilet facility in canyon for visitor use, public sanitation and source protection. Discourage new water development and encourage all present and future water development facilities to be moved underground. Move all trail use to the roadway.

Reason - Water development has had some visual impact which could be decreased by re-design of facilities. Visitors have demonstrated a need for restroom facilities in the canyon. A vault type toilet would not be visually obtrusive and would enhance water resource concerns for regarding public health.

### ***In Summary . . . ENTRANCE BOOTHS***

Present condition - The orientation information and other information is now only available in the middle of the park at the ranger office/information station. This requires people to come to that building to get information and pay their user fees. All park visitors are required to pay a user fee. The inconvenience of the present fee collection system is the number one visitor complaint at the park.

Proposed solution - Utilize entrance booth at or near park boundaries to help orient visitors before they enter the park and also to issue needed permits and collect user fees.

Reason - This would give people access to needed information at the beginning of their park experience. It would also insure more convenient fee administration and better overall visitor experience.

### ***In Summary . . . DEVELOPMENT AND TRANSITION ZONES***

Present condition - At the present time facility development within the canyon (other than the road) is limited to 3 areas: 1) present campground area, 2) present concession area, and 3) Galoot, old residence and maintenance shed area. West Canyon has facilities related to water development. Transition from the north end of the park is gradual with limited residential developments near that access road. The south entrance to the park is highly developed with Tuacahn, Franklin Quest Fitness Center, and residential development of Ivins.

Proposed solution - Protect values of the canyon by limiting development to only the areas presently developed within the park. These development areas may be altered to better meet visitor needs. Along the East Rim of the park, development set backs to protect the view shed are encouraged. Any major development of facilities such as concessions and visitor/education center will be at the south entrance of Snow Canyon where major private development already exists.

Reason - Protection of existing values within the canyon were considered a high priority. The team felt a need to minimize development impacts where those impacts do not now exist. It is further necessary to protect the park view shed which will be covered later in this plan.

The park and its current management provide both source protection for wells through limiting access up West Canyon and facilities protection through regular patrols and consistent management. The current wells may not meet the needs of the community and there is a desire on the part of the Snow Canyon Water Compact board to drill a new well and re-drill older wells within the canyon. The Utah Division of Parks and Recreation seeks to recognize the importance of Snow Canyon State Park's role in providing water to the community consistent with other management priorities such as ecosystem health, sound recreation management and education/interpretation.

Based on this desire the following direction has been identified:

1. Continue to provide source protection to the aquifer and property protection to water facilities through controlled access in West Canyon.

2. Support refurbishing and refitting existing wells to increase yields.
3. Encourage no net increase in wells within the park.
4. Discourage any proposal to drill wells outside of West Canyon
5. Negotiate or partner with Town of Ivins to allow Ivins Spring (Snow Spring) to flow freely as a means of enhancing riparian habitat within the park.
6. Complete a cooperative agreement with Snow Canyon water users to place pump stations underground as a means of minimizing surface disturbance and visual impacts.
7. Survey, map, protect, and monitor all surface water sources within Snow Canyon as a means of managing for wildlife and recreation benefits.
8. Monitor the relationship of groundwater to surface water within the canyon as a means of preserving surface water availability; especially Ivins Spring.
9. Mitigate any surface water losses.
10. Prove up and actively manage all water rights owned by the Utah Division of Parks and Recreation.

### ***In Summary . . . WATER DEVELOPMENT IN PARK***

Present Condition - The park water delivery system is owned and managed by the state park with water provided to the system by the City of St. George. There are 6 water wells in Snow Canyon, all of which are in West Canyon. One spring exists in Johnson Arch Canyon. The water rights for that spring belong to the Town of Ivins.

Proposed Solution - Park will continue to manage the delivery system for the park. Water well developments will be only in West Canyon. Encourage no net gain in water wells in the canyon. Well owners will be encouraged to move their well head facilities underground to reduce visual impacts. Park will work with the Town of Ivins to allow the spring in Johnson Canyon to flow freely as a means of enhancing the riparian habitat within the canyon.

Reason - Well development exists with little, other than, visual impacts which could be mitigated by moving facilities underground. Johnson Arch is an extremely unique and fragile biological community which could be greatly enhanced if the spring located in the canyon were returned to a free flowing condition. By redrilling existing wells there is less resource disturbance with a similar outcome to drilling a new well.

The Washington County HCP established the goal of building a visitor/education center associated with the Red Cliffs Desert Reserve. Snow Canyon has been discussed as a potential site. Site selection criteria has included good visitor access, some proximity to other businesses or activities which draw people, low noise pollution, low impact to natural communities, a panoramic natural setting, and sufficient growing space. Clearly Snow Canyon has the potential to be a tremendous regional resource for education because of its unique geologic and biotic attributes and proximity to interstate visitor travel. The Visitor/Education Center would be predicated on a sound business plan to make is self sustaining as well as a partnership approach to include a board of directors to oversee the center.

Specific recommendations from the advisory committee for the Visitor/Education Center include the following:

1. The facility site should be carefully situated at the park's south entrance to maximize visitor attraction without impeding visual corridors or significantly affecting key species in the park and Red Cliffs Desert Reserve.
2. The architecture should be a Southwestern or "kayenta" style or similar approach whereby buildings are largely "blended" into the natural landscape.
3. Planning, and building by phases, if necessary, should be predicted on the establishment of a large center with multiple functions to maximize cost operating efficiencies. For example:
  - interactive displays of live or non-live animals in natural settings to focus on a greater awareness and understanding of nature.
  - a natural history theater
  - class rooms where students can earn school credits
  - a raptor/animal rehabilitation center
  - a small research facility
  - conference rooms
  - commercial section where user services can be provided

- administrative offices for the park and the HCP staff
  - maintenance/garage for center, park and Red Cliffs Desert Reserve
  - an overall approximate size of 26,000 square feet
4. The center will be located at the south entrance to help reduce traffic congestion as well as to provide good access to power and sewer systems to reduce capitol costs. It should also be placed in a location near a nature trail system which compliments the education theme of the center.

***In Summary . . . VISITOR/EDUCATION CENTER***

Present situation - Snow Canyon State Park does not have a visitor center. Interpretive facilities include outdoor exhibits and the ranger station as an information source for visitors. The Washington County School District does not have an outdoor education center but provides outdoor education through traditional class rooms, field trips and a summer resource workshop. Universities and colleges base research on-campus and augment education through field trips. The Red Cliffs Desert Reserve does not have a field management and research facility.

Proposed solution - Develop a partnership with the Washington County School District, Dixie College, SUU, Red Cliffs Desert Reserve, State Parks and the general public to plan and construct a facility to serve the needs of the park, area schools and the Reserve. This facility will be located near the south entrance to the park with any concessions located adjacent to or nearby.

Reason - A partnership will make development of such a facility more feasible. The needs of each organization differ in some respects and are the same in others. A single facility eliminates duplication of efforts in areas where needs are the same. A single development would also lessen the impact of multiple site disturbances. The location at the south entrance would be the site most accessible to the majority of users and would ease the transition from development to natural. It is also felt some commercial involvement in the facility will be necessary to generate ongoing operational costs.

***TRANSPORTATION***

Motorized vehicles and associated concerns relating to transportation are complex issues in Snow Canyon State Park. Parking lots, pavement, trails and roads are big investments, financially and from the standpoint of resource impacts. Currently, the park access road is owned and maintained by the Utah Department of Transportation (UDOT). The road bisects Snow Canyon State Park and is frequently used as a shortcut by residents in Diamond Valley and Winchester Hills as well as by sightseers. The road through Snow Canyon State Park is accessed on the north by Highway 18 and on the south through the City of Ivins (See Transportation and Facilities Map - Section 9). Access

from Highway 18 takes travelers down into the canyon through the most scenic - but also the most steep and winding - terrain. Transportation, relating to the management planning effort is closely interconnected with issues of increased visitation, public safety, natural resource management, trails for bikers and hikers, recreation experience, visual quality, information dissemination and park management. Each of these issues is significant as follows:

Public safety on the existing roadway is a concern due to the speed at which many drivers pass down into Snow Canyon. The grade is very steep and the road is designed for speeds of not more than 25 miles per hour. Citations number in the hundreds and even the most conscientious operators have acknowledged significant violations of speed. While accident statistics are lacking, the planning team felt waiting until someone is injured or killed in association with this concern is not responsible.

Increased visitation and roadway use will occur in Snow Canyon State Park both from tourists and as the result of in-migration to Washington County. The Utah Department of Transportation has established design year average daily traffic estimates at 11,300 cars per day at a design speed of 25 miles per hour. If estimates are close to accurate it will negatively affect the visitor experience in the canyon. This will also exacerbate the problem of hikers and bikers on the road shoulders, competing for a way to move through the park. Such congestion will relate to a less positive recreation experience.

Trails for hikers and bicyclists are lacking currently within the park. The City of Ivins has completed a trail to the park's southern entrance and the City of St. George is currently constructing a trail to the park adjacent to Highway 18. A trail through Snow Canyon would complete the loop. Currently, hikers and bikers use road shoulders to navigate through the canyon, though this road was not designed for these purposes and a safety hazard does exist.

Natural resource management is an issue in association with transportation planning within the canyon for several reasons. These include: 1) The fact that the park represents Desert Tortoise habitat and the concomitant resource development constraints. 2) Due to the topography in the

canyon, any new trails which might developed would be required to move away from the existing road and wind their way through the park to meet standards for grade and pitch. The cut and fill associated with new trail development would affect visual quality by creating a footprint of up to seventy feet wide in areas with a trail twelve foot wide in sensitive habitat.

Park management is also complicated by having two primary entrances. Disseminating information such as safety messages or collecting fees from two entrances requires more staff, more budget, and more logistical coordination to identify but a few of the complexities of managing two primary entrances.

Construction on Snow Canyon Parkway is about to begin as part of the long range transportation plan in the St. George area. This road will carry traffic from St. George to the area around Ivins serving, too, as an access road to Snow Canyon State Park. The Utah Division of Parks and Recreation has contributed \$200,000.00 toward the completion of this roadway. A trail, to promote biking and hiking to and in the park, will be located adjacent to the roadway.

The planning team struggled to reach a consensus on a variety of transportation issues. A “no action” alternative was not an option since the team had been called upon to make recommendations for managing the park into the 21<sup>st</sup> century. While the team acknowledges their limited knowledge related to transportation planning, members recommend two-way travel from the south entrance to the Galoot day use area and one-way from Galoot with pullouts for photo opportunities along the roadway to the north exit. Where the roadway becomes one-way to automobiles, the paved surface would serve as both an uphill exit out of the park for cars and a multi-use travel corridor for hikers and bikers in both directions. This recommendation is contingent upon study and formal recommendation by a consulting firm knowledgeable in transportation planning and considerate of issues the team addressed. Any recommendation which consultants identify must also be consistent with federal safety standards for transportation. This study has been prioritized second only to the completion of a trail in the lower sections of the canyon.

### ***In Summary . . . BIKE/HIKE CONNECTION***

Present condition - The Town of Ivins has completed a bike/hike trail to the south end of the park. The City of St. George is nearing completion of a bike/hike trail to the north end of the park. Many bikers and walkers use the road through the canyon including fitness centers with a use agreement with the park. A grant to complete approximately ½ of the needed trail will be used to connect the two city trails. The situation on the road is already extremely unsafe. The completion of the St. George link is expected to aggravate issues of safety.

Proposed solution - Complete the trail through Snow Canyon with as little resource and visual impact as possible. From Galoot north use half of the existing road and south from the Galoot day use area to the Town of Ivins. A separate hike/hike trail will be built adjacent to the highway.

Reason - Need to correct a safety problem and need to deliver people using either of the two city trails to the other city trail as safely as possible. Try to accomplish this trail with as little impact as possible as directed by values established through public meetings.

During the draft review of this planning document, transportation was the most controversial issue. The team considered the variety of public concerns but continued to feel this alternative was the best until a more formal analysis is completed. One concern was a threat to the opportunity for scenic driving. This form of recreation will be maintained by enhancing the overlook south of the existing entrance off Highway 18; and, providing pullouts for visitors to stop and look back upon the canyon. Another concern was for local access between communities of Ivins and Diamond Valley, Winchester Hills and other communities in the northwest corner of the county. Once the Snow Canyon entrance off Highway 18 is closed to southbound travel, residents will be inconvenienced by the additional mileage to reach their destination. This issue will be resolved for some residents with the completion of the Snow Canyon Parkway, with its higher speeds and a similar endpoint. Additionally, all major traffic changes would be announced far in advance and signed well to inform tourists, commercial busses and locals of the changes as a means of minimizing inconvenience.

By making the south entrance the only motorized entrance, the park will be better able to provide a higher level of service and visitor satisfaction.

### ***In Summary . . . ROAD OWNERSHIP***

Present Condition - The road from Ivins to Hwy. 18 which runs through the park is owned and maintained by the Utah Department of Transportation (UDOT). The road has been identified by UDOT as a candidate for removal from the state highway system. In addition, future average daily traffic projections conducted by UDOT estimate use to reach 11,300 cars per day in 20 years. The road has a design speed of 25 miles per hour. Public safety, speed, resource impacts, trails and recreation quality all bear upon the issue of how traffic will circulate through the park.

Proposed Solution - It is proposed the road remains part of the state highway system but other government agencies may assume ownership and maintenance responsibilities if UDOT opts to release this stretch of highway from their system. The road will become one-way at Galoot Hill, exiting onto Highway 18. A bike/hike trail will join Ivins City with the trail adjacent to Highway 18. This will occur on the roadway in the upper portions of the canyon, consistent with federal safety standards. Prior to traffic routing changes, further study for more concrete recommendations and the proposed Snow Canyon Parkway will be completed. Local citizens and tourism promoters will be notified far in advance to minimize inconvenience and potential economic impacts.

Reason - UDOT is best suited but may not want to manage a road which also formally manages bicyclists and pedestrian traffic in the same corridor. Public safety is a significant concern so a “no action” recommendation was not a considered option since increasing numbers of vehicles and visitors will negatively impact recreation management. Using existing roads for trail expansion and linkage will decrease impacts to natural resources and allow other uses of limited finances.

### ***In Summary . . . DEVELOPMENT NEEDS***

Present Condition - At present, development includes:

- ♦ Water available at Galoot area, old residence area, maintenance shed, campground area, sand dunes area and West Canyon.
- ♦ Paved parking at campground area and Three Ponds trail head.
- ♦ Unpaved parking - sand dunes, West Canyon, old residence area, Galoot and several pull offs through the canyon.
- ♦ Maintenance shed near old ranger residence area.
- ♦ Primitive pit toilets at Galoot.
- ♦ Concession office, tack shed and corrals at mouth of West Canyon.
- ♦ Ranger Office/Information Center at campground area, 14 developed sites with

hookups and 22 developed sites without hookups.

- ◆ One restroom with flush toilets and drain field at campground and
- ◆ One restroom with showers and drain field at campground.
- ◆ One sewage dump station with drain field.
- ◆ Two small storage out buildings at campground area.

Proposed solution - Minimize impacts of and developments of area within the park, with additions including:

\*New Development

1. North end parking and staging area. Develop a paved parking area where park road and Hwy. 18 meet. This would include parking for 20 vehicles or trailer and an unloading area for horses and bicycles.
2. Bike/hike trail through park. This would connect St. George trail at north end of the park to Ivins trail at the south end of the park.
3. Visitor/Education Center to be built on south boundary of the park. The facility would be multi purpose and is explained further in the Facilities Development Section of this plan.
4. Entrance booth will be located at the Visitor/Education Center.
5. Install vault toilet in West Canyon.

\*Improvements or Upgrades

1. Several presently unpaved photo opportunity pull offs will be paved and curbed. Others will be eliminated. See Map #6 in Section 9 - Tables and Maps.
2. Galoot day use area will be improved by adding paved parking area, flush toilet restrooms and 30 individual picnic sites.

***In Summary . . . DEVELOPMENT NEEDS (con't.)***

3. Old residence site will be improved by adding paved parking for 15 vehicles and a vault unisex restroom.
3. Camp area will be improved by adding roadside paved parking lot for 20 day use vehicles. Add new restrooms to replace old flush facilities and consolidate 3 storage buildings into a single storage facility of low visual impact.
5. Change concession area to a day use area. Add paved parking for 20 vehicles or trailers, add flush toilet restrooms, unloading facilities for bicycles and horses, hitching post for horse and bicycle rack.

\*Removal

1. Remove present maintenance shack

2. Remove or re-direct function of the ranger information station
3. Remove concession office.

Reason - Meet the needs defined through the planning process in a way that has low impacts on the park and has minimal costs.

### ***In Summary . . . DEVELOPMENT AND ARCHITECTURAL DESIGN***

Present condition - There is no consistent pattern to the design of the limited facilities now within the park.

Proposed solution - All new developments will be finished with stucco, stone or masonry similar in color to the red rocks of the canyon. Any remodeling of existing facilities will include a stucco finish which is similar in color to the red rocks of the canyon.

Reason - Lessen the visual impact caused by the contrast between facilities and the natural setting.

### ***In Summary . . . SIGNING***

Present condition - No signing plan for Snow Canyon exists, though some UDOT, directional and information signs have been strategically placed throughout the park.

Proposed action - Complete a sign survey and a plan consistent with signage in the Red Cliffs Desert Reserve to address the overall need for signing. This should include safety as identified by UDOT, risk management and State Parks. This survey should also include consistent design for informational and directional signs as well as interpretive signing.

Reason - Need for consistent, orderly signing of the park with an effort not to over sign.



- *Neighbor Relations*

This plan recognized that the only way the park can successfully fulfill its mission is with support and partnerships with the local community and park users. This process was initiated through local involvement in the form of recommending persons to sit on the team and also by informing community leaders of the process through which this plan will be developed. The meeting represented only the beginning of a greater role in the management of Snow Canyon State Park.

Currently there is no formal process to involve local government in the formal management of the park. During the process, the team had prolonged discussions focusing on how the park should be managed and by whom. Other points in the discussion recognized the need for greater community say in how the park was managed. Real concern for the implementation of the plan as it related to facilities development and the lengthy process of acquiring development monies at the state level is also a concern of local government.

The recommendation was to continue management of the park through the Utah Division of Parks and Recreation. In association with this recommendation was the requirement that the park develop a Memorandum of Understanding (MOU) with local communities to provide joint oversight of the park and its management. In addition, an advisory committee will be established. The plan calls for a number of committees to be established such as a climbing committee and an education committee which will be linked to a main committee. By linking (tiering) sub-committees to a main park advisory committee there will be continuity in management direction and consistent communication. The main advisory committee will be assembled and chartered similar to the Wildlife Technical Committee at Antelope Island State Park. This committee represents a variety

of wildlife/natural resource related interests who make formal recommendations for the park to follow but have no parks board established policy setting authority.

Opportunities provided within each MOU will commit the Utah Division of Parks and Recreation to consult and cooperate with local communities in management of the park related to issues such as development funding, partnershiping, plan implementation, establishing operational priorities and management direction. Examples of this cooperation may include sharing of services, joint development funding, and formal management recommendations from the advisory board. The advisory committee should meet regularly and discuss community and park issues with joint problem solving to the benefit of all involved. These committees will be initiated and organized by the Utah Division of Parks and Recreation at the regional and park level.

It is difficult to articulate too many specifics associated with these types of agreements. Formal commitments of resources, discussing formal policy recommendations and partnershiping details is complex due to the number of communities, elected officials, user groups and a number of different governing bodies (county commissions, city councils, etc.) invited to get involved. Each community or user group might desire a different level of involvement or may decline altogether. Leadership from the Town of Ivins has expressed a desire to be heavily involved in a variety of ways including staffing assistance, partnershiping on development funding and finding joint solutions to resource issues. Each of these activities represent realistic opportunities and will be pursued in varying degrees upon plan completion.

In this era of opposition to higher taxes, distaste of rising fees, the need for more local involvement, and growing demand for recreation, it is the responsibility of each citizen, community, and agency to find creative solutions which promote the mutual achievement of our respective goals.

### ***In Summary . . .STAKEHOLDER INVOLVEMENT***

Present condition - There is no formal process to involve local governments and stakeholders in the management of Snow Canyon; however, there is a high level of respect between local

governments and park personnel. Ivins City has voiced a strong desire to be involved in the operation and management of Snow Canyon.

Proposed solution - Organize a main advisory committee comprised of local community members, recreation participants and resource professionals to help direct the management decisions of Snow Canyon. This group will be a strong part of all major management decisions directing the park's operations. Volunteer groups will also be organized to help with the daily operation of the park and they will come from the communities near the park. For fee purposes, local communities may have the opportunity to purchase seasonal passes for all of their residents at a reduced rate.

Reason - To fulfill the desire of local community members to be involved in the park's operation. Park recognizes the value of community support in park management. Need to have community assist with delivery of some facility or visitor services.

***In Summary . . . COORDINATION WITH COUNTY RECREATION AND EDUCATIONAL PLAN***

Present Condition - No county educational plan exists which includes Snow Canyon. No county recreation plan exists.

Proposed solution - Form a team which will be comprised of local school district, SUU, Dixie College and RCDR to write an educational plan which will include curriculum and methods to utilize the resources found at Snow Canyon to the benefit of the area students.

If county gets involved in a county recreation plan the park will become a major contributor to that plan.

Reason - To become a better resource to area education and to help area students gain an understanding and appreciation of the natural resources found in Snow Canyon State Park. This appreciation will translate into those students helping protect these resources.

## ● *Funding and Administration*

The Utah Division of Parks and Recreation is funded through the generation of user fees as well as receiving appropriations from the general fund through the legislature. Philosophically, there is concern from persons not using state parks having to support the parks through taxation. Through the administration of user fees, visitors who do use the parks are actually the ones who help pay for their continued operation.

The team discussed this issue and recommended that, related to the issue of community involvement, the park needed to have real participation by the community with opportunities to make formal management recommendations through a formal written agreement with the Division of Parks and Recreation. In this same discussion, the team recommended that a discounted annual park permit for local residents be available contingent upon local investment into the park.

This type of pass already exists in the form of the single park pass which sells for \$40.00 for a calendar year. The same pass is available for \$35.00 prior to the holiday season as an incentive for early sales. This issue has surfaced at other parks and has not traditionally been provided for by the parks board, the policy arm of the agency responsible for fee setting.

Formal details associated with the teams recommendation, such as what level of investment in the park would qualify for reduced fees, or what level of discount would be available were not agreed

upon by the team. Various agency concerns do exist with such a suggestion but through the agency's commitment to this public process it is important to at least mention this recommendation.

The Division of Parks & Recreation recognizes that funding is a difficult process. Success is much more likely if there are partners willing to assist financially, hence the desire to partner with communities and other institutions where mutually beneficial.

### COMMERCIAL USES

Commercial activities represent one way of helping to fund the park but more realistically, and traditionally, are another means of providing service to visitors which cannot otherwise be provided by the managing agency. This is the case for the horseback riding concession near West Canyon. That concession agreement is a temporary special use permit which will expire in December of 1997. In addition, there is a climbing instructor working within the park without any type of permit or contract. Several resale agreements exist for ice, firewood and soft drinks.

In the future, all commercial activities will be handled under some type of contract or written agreement. The horse riding concession contract will not be renewed and they will be encouraged to work with BLM, private land owners and the Division to set up their horse riding operation to the north of the park on BLM lands which the Division has proposed to manage as a means of expanding recreational opportunity. Horseback riding concession is space intensive at the entrance to a canyon which provides much recreational opportunity. Also visual impacts of the corrals would conflict with the values of this plan. This area will be converted to a day use parking facility providing access to both the sand dunes and West Canyon.

All other concessions will operate out of the Visitor/Education Center area at the south entrance to the park. To lessen impacts in the park, all future commercial activities will be based at one location on the fringe of the park not detracting from the natural setting or encouraging more physical development.

### ***In Summary . . . COMMERCIAL USE OF THE PARK***

Present condition - A horse riding concession operates under a concession agreement. That concession agreement is a temporary special use permit which will expire in December , 1997. There is a climbing instructor working within the park without any type of permit or contract. Several resale agreements exist for ice, firewood and soft drinks.

Proposed solution - Commercial activities will only be allowed under contract or special use agreement. The horse riding concession contract will not be renewed and they will be encouraged to work with BLM or private land owners to set up their horse riding operation to the north of the park. All concessions will operate out of the Visitor/Education Center area at the south entrance to the park.

Reason - Concessionaires have been space intensive in a canyon with limited acreage. In addition, visual impacts of such use would conflict with the values and intent of this plan. All commercial uses of the park are required to be covered under some type of contract. To lessen impacts in the park, all future commercial activities will be based at one location on the fringe of the park.

### STAFFING

Currently the park is staffed by three full time rangers with law enforcement power with 13 months of seasonal staff time. The park is also responsible for the administration of the boating program at Gunlock reservoir and jointly responsible along with Quail Creek State Park for the Off Highway Vehicle and snowmobile program on federal lands in the area. The current staff size is not sufficient and will be more seriously impacted under management proposed within this plan.

The team identified the need for someone responsible for Interpretation and Education such as a resource and education specialist. The team further identified the need to have at least one of the assigned personnel trained and proficient in rock climbing and rescue. Also identified was the need for an additional 18 months of seasonal time to be assigned to the entrance booth operations. This equates to two permanent staff persons and significant seasonal investment. The team also recommended different mechanism to manage Gunlock reservoir while maintaining limited Off Highway Vehicle and snowmobile responsibilities through cooperation with Quail Creek.

In response to program recommendations the park will establish a docent program to aide in meeting the educational objectives. The docent program should seek to involve people of all ages, but particularly encourage the involvement of students. A partnership with an organization such as the Retired and Senior Volunteer Program (RSVP) or the local Volunteer Center to identify potential volunteers should be sought in helping to meet this objective. Such a partnership would be mutually beneficial.

There is need for coordination of the interpretation and education responsibility necessary at the park. The climbing community identified a need for someone on staff to be proficient in rock climbing and rock rescue and the team sees a value in this proposal. This person would be responsible for the implementation and operation of the rock climbing management plan. Seasonal time to operate the entrance booth should more than pay for costs through increased fee collection. Other methods of staffing may also be available such as the expanded utilization of volunteers.

***In Summary . . . STAFFING NEEDS***

Present condition - Three full time rangers with law enforcement power are stationed at Snow Canyon with 13 months of seasonal time.

Proposed solution - The team identified the need for someone responsible for Interpretation and Education such as a resource and education specialist. The team further identified the need to have at least one of the assigned personnel trained and proficient in rock climbing and rescue. Also identified was the need for a strong volunteer program and additional staff to assist in the implementation of the plan..

Reason - There is need for coordination of the interpretation and education responsibility necessary at the park. The climbing community identified a need for someone on staff to be proficient in rock climbing and rock rescue and the team sees a value in this proposal. This person would be responsible for the implementation and operation of the rock climbing management plan. Seasonal time to operate the entrance booth should more than pay for costs through increased fee collection.

### ***In Summary . . . MANAGEMENT***

Present condition - Park is managed by Utah Division of Parks & Recreation as one of 45 units of the state park system. The Town of Ivins has offered to assist and/or assume management through a proposal, where Snow Canyon State Park would be part of a regional park system.

Proposed solution - Park will continue to be operated as part of the Utah State Park system. Communities, park users, educators and resource professionals will be involved in park management through an advisory committee as discussed in the Neighbor Relations section of the document.

Reason - Snow Canyon is of a statewide, rather than regional, significance. Public input discouraged change in the operation and management of Snow Canyon but supports broader constituent involvement.

### **RISK MANAGEMENT/LIABILITY/EMERGENCY SERVICES**

There are certain risks inherent to natural outdoor recreation experiences and park visitors do assume more liability in this setting for their own action than in a developed recreation site. Emergency

services are furnished by the county. Park rangers are trained as Emergency First Responders. In addition to the First Aid training now required of the park rangers, one rangers will be trained in rock rescue techniques. The local communities will still provide emergency services and search and rescue services within the park.

Appendix D is a copy of a hazards analysis and mitigation report prepared by the Division of Comprehensive Emergency Management and reviewed by the Department of Administrative Services, Office of Risk Management. The team endorses the recommendations of risk management as outlined in the report and will provide recommendation consideration for incorporation into each management activity discussed and capital improvement design. As new developments take place or as major renovation takes place, this document will provide guidance to planning. GIS overlay maps will be developed to show 50 and 100-year flood plains. These maps will be used in planning and management decisions. Visitors will be informed of hazards and other safety concerns through all reasonable means possible (exhibits, brochures, personal contact and signs).

Immediate implementation of the Hazard Analysis is impractical. Visitors assume most of the liability for their actions. The park recognizes the obligation to make visitors aware of hazards and to close areas to certain types of use when danger is high. Most of the serious injuries in the park are related to rock climbing or scrambling activities and the park recognizes a need to have someone proficient in rock rescue on staff.

***In Summary . . . RISK MANAGEMENT/LIABILITY/EMERGENCY SERVICES***

Present condition - There are certain risks inherent to natural outdoor recreation experiences and park visitors do assume more liability for their own action than in a developed recreation site. Emergency services are furnished by the county. Park rangers are trained as Emergency First Responders.

Proposed solution - Appendix D is a copy of a hazards analysis and mitigation report. The team unanimously endorses recommendations of risk management as outlined in the report and encourages the incorporation into every management and capital improvement design. As new developments take place or as major renovation takes place, this document will provide guidance to planning. GIS overlay maps will be developed to show 50 and 100-year flood plains. These maps will be used in planning. Visitors will be informed of hazards and other safety concerns through all interpretive means possible (exhibits, brochures and signs). In addition to the First Aid training now required of the park rangers, one of those rangers will be trained in rock rescue techniques. Local communities will still provide emergency services and search and rescue services within the park.

Reason - Immediate implementation of the Hazard Analysis is impractical. Visitors assume most of the liability for their actions. The park recognizes the obligation to make visitors aware of hazards and to close areas to certain types of use when danger is high. Most potentially serious injuries in the park are related to rock climbing or scrambling activities. The park recognizes a need to have someone proficient in rock rescue on staff.

## FUNDING ISSUES

Snow Canyon has an operating budget of approximately \$200,000 per year. The park collects approximately \$130,000 of which approximately \$68,000 comes from camping revenues with the remainder coming from day use fees and other revenue sources such as concessions and retail sales. A more controlled and convenient fee collection system would generate a great deal more in park user fees. A more efficient and convenient fee collection system must be implemented to ease collections through the use of entrance booths.

All development monies must come from legislative appropriation or through a partnership. The funding mechanism for development is slow and cumbersome. State funds are increasingly difficult to secure. Partnerships or shared cost projects seem to be more successful in getting funds. The team recommended seeking partners in development especially for the proposed visitor/education center and entrance booths. This is consistent with and related to the teams recommendation to partner

with communities such as the town of Ivins and completing the MOA with communities in the area to increase their stake and involvement in the park.

### ***In Summary . . . FUNDING ISSUES***

Present situation - Snow Canyon has an operating budget of approximately \$200,000 per year and collects approximately \$130,000. All development monies must come from legislative appropriation or through some type of partnership. A more controlled and more convenient fee collection system would generate a great deal more in collections from park user fees. The funding mechanism for development is slow and cumbersome.

Proposed solution - Seek partners in development especially for the proposed visitor/education center. Implement a more effective and convenient fee collection system to increase collections through the use of an entrance booth.

Reason - State funds are increasingly difficult to secure. Partnerships or shared cost projects seem to be more successful in getting funds. Increases in user fee collections will make more money available for use within the park system.

### ***In Summary . . . OFF PARK RESPONSIBILITIES***

Present condition - Snow Canyon is responsible for the boating safety and operation of Gunlock reservoir. Snow Canyon is also responsible for the Off Highway Vehicle and snowmobile program on federal lands in the area.

Proposed solution - Find a different mechanism to manage Gunlock reservoir. Maintain limited Off Highway Vehicle and snowmobile responsibilities.

Reason - There is a demonstrated need for specialization to cover the more complex responsibilities related to the operation of Snow Canyon. The boating safety responsibility does not seem to be a logical fit with the other responsibility of the park.

## **● *Plan Implementation and Development Priorities***

This resource management plan represents a compilation of recommendations of varying specificity

to achieve the vision and mission of the park as identified by the team. One by-product of this process is the opening of communication and joint problem solving which translates into management direction to be implemented immediately. This is exemplified by many of the climbing and equestrian recommendations. Associated with those actions which will be immediately implemented are management actions which will occur shortly after plan adoption such as initiating the development of partnership agreements.

Implementing management recommendations will be achieved through the setting of priorities between stakeholders, supervisors and park staff in association with existing workload and available funding. Significant recommendations from this plan will be implemented without requiring the expenditure of any monies, yet seeing great benefit through clearer management direction and better understanding of customer needs and expectations.

Immediate implementation of planning priorities which do require funding are recommended as follows:

1. Site vault toilets in response to visitor needs.
2. Develop funded trails until current ISTEPA funding runs out from the Ivins trail Northward into the park.
3. Finalize master planning including completing the compilation of baseline biology and studying traffic flow related to the recommendation of making the road in Snow Canyon one way (uphill) beyond the proposed Galoot Hill Day Use expansion as a means of improving safety and enhancing pedestrian use.
4. Temporary entrance station established.
5. Civil engineering/design layout creating working drawings and biddable documents associated with the proposed expansion of the park.
6. Complete West Canyon day-use area developed including restrooms, parking, and an uncovered picnic area.
7. Complete Galoot day-use area developed including restrooms, parking, and an uncovered picnic area along with creating a longer trail to the lava tubes.
8. Complete road changes related to priority number 3 above.
9. Improve signage related to park information and regulation.
10. Visitor/Education Center built in partnership with Washington County.

Other recommendations were identified which need to be implemented as soon as possible but may

not need funding to accomplish include:

- U Enhance parking at day use areas.
- U Pursue Education and Interpretation recommendations
- U Begin creating an advisory committee and complete Memorandums of Understanding for community involvement
- U Concession removal
- U Staff for climbing issues through training
- U Hard surfacing trails

## ● **Conclusion**

As stated in the Executive Summary, the process by which this plan was created was open and inclusive. Numerous public and focus group meetings, radio programs and a visitor survey helped insure customers had an opportunity for input. The team was made up of resource specialists, community leaders, educators and agency staff. Throughout the development of the plan the team debated issues and recommendations. No one participant was successful in achieving their desired outcome on every issue. They did, however, consent to the direction outlined in the plan which provides a balance of differing values and perspectives focusing on three key vision elements as follows:

- C Sustaining ecosystem health and assuring the conservation of resources.
- C Providing interpretation and education to the community and park visitors.
- C Serving the recreational interests of visitors.

These vision elements will help the park and community to provide for the recreation, education and resource conservation needs of today while also ensuring similar opportunities for park visitors in the next two decades.

Acquiring better data is one component of this plan which will assist managers in understanding the resource. Monitoring of resource condition, visitor use and impacts may provide information which

leads to a change in recreation opportunity and visitor use. The Snow Canyon Resource Management Plan is intended to be a document which has sufficient flexibility to be amended in reaction to changing resource conditions, visitor needs and expectations, community needs, and agency opportunity. Formal amendments to the plan may be made by Utah Division of Parks and Recreation with input from park visitors, community leaders, resource professionals and other stakeholders who have oversight responsibilities pertinent to the management of the park.