

## Chapter 5 – Natural Areas of Special Consideration

The City of Hurricane contains a wide variety of landscapes, most of which are highly visible, providing scenery and backdrops that are uniquely Hurricane. These varied and unique landscapes are all considered areas of special consideration due to development constraints they create. These include a wide variety of geologic formations such as anticlines, lava flows, cinder cones, rock outcrops, rock falls, washes, and elevated faults. Additionally, but not as readily visible, are other areas of special consideration including: floodplains, hillsides, earthquake faults, cliffs, rockfall zones, and other areas identified by the *Geologic Hazards and Adverse Construction Conditions, St. George-Hurricane Metropolitan Area, Washington County 2008* by William R. Lund, Tyler R. Knudsen, Garrett S. Vice, and Lucas M. Shaw, Special Study 127 Utah Geological Survey, a Division of the Utah Department of Natural Resources and associated maps.

### Goals:

1. To advise property owners and developers of potential land development risks;
2. To aid in determining the best land use for the area;
3. To assist in establishing procedures and standards for reviewing development projects, allowing reasonable development of the land without having a significant negative effect on the property owners and the community as a whole
4. To identify those areas which should not be developed due to the nature of the sensitive area;
5. To protect property rights through the application of the “takings” review procedure set forth in Section 10-7-21 of the Hurricane Land Use Code.



Policies:

1. Special development standards will be applied to the following unique ridge areas:
  - A. The west and east cliff and ridges of the Virgin Anticline (ridges on each side of Quail Lake and the Purgatory valley to the south).
  - B. The lava bluff and ridge west of Sullivan's Knoll (South Cinder Cone).
  - C. The Sullivan's Knoll (South Cinder Cone) ridgeline extending southerly.
  - D. The Hurricane Cliff.
2. Areas of special consideration identified by the *Geologic Hazards and Adverse Construction Conditions, St. George-Hurricane Metropolitan Area, Washington County 2008* by William R. Lund, Tyler R. Knudsen, Garrett S. Vice, and Lucas M. Shaw, *Special Study 127 Utah Geological Survey, a Division of the Utah Department of Natural Resources* and associated maps.
3. Hillsides with slopes greater than 10 percent will be subject to special review and design considerations.
4. Slopes over 30% will be generally considered as too steep to develop.

## **Floodplains**

Floodplains are nature's way of dissipating the energy of the periodic high flow of rivers and washes. In normal conditions vegetation adequately protects riverbanks and trunks, stems and branches slow the water down near the banks, and the soil is held tightly in place by fibrous root systems. Runoff quantities may exceed the capacity of the channel, in which case the river or wash overflows its banks and spills out onto a broad terrace referred to as a floodplain. As the water spreads out, it slows down and its erosive force is greatly diminished. As it slows it also deposits sediment, creating the fertile soils usually associated with floodplains

The Virgin River is a major source of local flooding, but due to the size of the channel and location for the most part in a remote canyon, flooding has not been a local problem except to industrial development on the west side of the City.

A larger threat to the City is potential flooding of Goulds Wash. FEMA provided Digital Flood Insurance Rate maps for Washington County in 2009 and flood hazard areas along the Virgin River and Goulds Wash are identified.

Additionally, the City has adopted a storm drainage master plan to address concerns with local flooding off developed and undeveloped properties.



#### Floodplain Policies:

1. Regulations established in the City's floodplain management ordinance should be strictly enforced.
2. The City will continue to enforce, and refine when necessary, the current floodplain protection regulations including requiring floodplain development permits.
3. The City seeks to minimize increased demand for flood storage by:
  - a. Seeking to increase detention and storage in storm water systems where it will decrease peak flow;
  - b. Encouraging the creation of new natural detention areas (wetlands, floodable areas) in areas adjacent to appropriate land uses to decrease storm water runoff; and
  - c. Require new development to limit runoff volumes to pre-development levels.
4. The City should discourage the channelization of streams and encourage the restoration of natural floodplains and streams.
5. The City should continue to pursue the creation of a detention structure on Goulds Wash and apply for a Letter Of Map Revision to minimize impacts on existing structures and property owners.
6. The City should maintain its NFIP participating community status in good standing and take steps to upgrade status in the NFIP



#### **Air Quality and Night Skies**

The relatively pristine air around Hurricane is another of the community's great natural

resources and attractions. Local air quality is excellent and is rated as a category I under the federal clean air standards. The view of the night sky is still excellent in the fringe areas of the city but has been degraded by increasing numbers of street lights, parking lot lights, building lighting, and house lighting in the more densely populated areas.

Principal sources of air pollution in the Hurricane area are wind-blown dust, wood burning, and motor vehicle exhaust.

**Air Quality Policies:**

1. The City will seek to reduce man-induced dust by restricting the amount of land that may be disturbed at one time (through over lot grading) to the area that can be re-vegetated within the same season.
2. The City will continue to monitor air quality standards set by the State Board of Air Quality and petition for standards particular to Washington County.
3. Burn permits will be required for open burning in residential areas

**Protection of night sky policy:**

1. Lighting policies to limit continued degradation of the night sky will be developed

