

**KANE COUNTY
COMMISSION MEETING
AGENDA**



NOTICE AND AGENDA OF A MEETING OF THE KANE COUNTY COMMISSION

PUBLIC NOTICE IS HEREBY GIVEN that the Commissioners of Kane County, State of Utah, will hold a **Commission Meeting** in the Commission Chambers at the Kane County Courthouse, 76 N Main St., Kanab Utah on **MONDAY SEPTEMBER 12, 2016** at the hour of 10:00 o'clock a.m.

CALL MEETING TO ORDER

WELCOME

PRAYER

PLEDGE OF ALLEGIANCE

PUBLIC COMMENT: Three (3) Minute Time Limit per Speaker for Public Comment.

CONSENT AGENDA:

Check Edit Report approved as signed, Minutes of August 22, 2016 Meeting,

REGULAR SESSION:

- 1 **Resolution R-2016-10 Amending the Resource Management Plan/ Attorney Van Dyke**
- 2 **Ordinance O-2016-10 Amending title 9 chapter 16 and Title 2 Chapter 3 of the Kane County Code/ Attorney Van Dyke**
- 3 **ITS overtime approval /Dave Owens**
- 4 **Insurance Renewal/ Dave Owens**
- 5 **Approval of the Jones and DeMille Contract for the Johnson Canyon EWP Project / GIS Lou Pratt**
- 6 **Bid Opening for New Road Department Grader / Bert Harris Road Maintenance Director**
- 7 **2.0 Coalition - Joint Action Litigation**
- 8 **Other Business:**
 - Reports
 - Schedules0
 - Assignments

Closed Session:

- Discussing an individual's character, professional competence, or physical or mental health.
- Strategy sessions to discuss collective bargaining, pending or reasonably imminent litigation, or the purchase, exchange lease or sale of real property.
- Discussions regarding security personnel, devices or systems.
- Investigative proceedings regarding allegations of criminal misconduct.

NOTICE OF SPECIAL ACCOMMODATION DURING PUBLIC MEETINGS:

In compliance with the Americans with Disabilities Act, individuals needing special accommodations (including auxiliary communicative aids and services) during this meeting should notify Karla Johnson at (435) 644-2458.

Agenda items may be accelerated or taken out of order without notice as the Administration deems appropriate.

All items to be placed on the agenda must be submitted to the Clerk's office by noon Tuesday, prior to the meeting date.

CONSENT AGENDA

MINUTES

MINUTES
OF THE KANE COUNTY BOARD OF COMMISSIONERS
MEETING HELD AUGUST 22, 2016
IN THE
KANE COUNTY COMMISSION CHAMBERS,
76 NORTH MAIN, KANAB, UTAH

Present: Chairman Dirk Clayson, Commissioner James L. Matson, Commissioner Lamont Smith, Attorney Rob Van Dyke, and Clerk/Auditor Karla Johnson

CALL MEETING TO ORDER

WELCOME Commissioner Clayson brought the meeting to order

PRAYER Commissioner Clayson

PLEDGE OF ALLEGIANCE Commissioner Matson

The Commission moved the meeting outside to facilitate the number of public present

PUBLIC COMMENT: Three (3) Minute Time Limit per Speaker for Public Comment.

The following persons spoke to the night hunting issue with comments and concerns: Don Spreacher, Connie Ball, Francis Batista, Anthony Dugan, Rocky Tteal, Claudia Presto, Della Wallace, Robert Oster, Jim Walls, Justine Moore, Steve Hockseth, Brock Hutchings, Sam Carpenter, Kim Baccus, Jessica Rizzi, Vicki Hooper, Larry Eardman, Bonnie Backus, Nick McCauslan, Sharon St. John, Steve Livanavage, Mike Fairman, JoAnn Rando Moon, Patricia Patterson, Micky Houston, Colleen Sizemore, Moira Patterson, Paul Washburn, Lyn Dolance, and Camille Johnson.

The substance of the issues are summarized: Feeling safe was the paramount issue; Peace and safety are the reasons people come for tourism there was a desire on both sides of the issue to develop a work group to compromise; there was discussion on both sides of whether night hunting would affect tourism; there needs to be respect on both sides of the issue; the land has been cared for for generations and people should respect the condition that it is left in. The 600 feet was discussed as state law but the ordinance was 1 mile; The safety of firearms after dark was discussed; Concern about it being sporting or not was expressed; comments about the annoyance of spotlights at night; guns are dangerous and terrifying to foreigners; the legal hunters provide more eyes and ears and bring more safety to an area; Visitors will be afraid to camp; hunting is done far away from anyone and it is a great family sport; its all about the \$50 bounty; this has become an us and a them issue; question as to whether it is enforceable; the deer population is already too high; put public safety first; animals should be given safe time and time to rest; spotlighting is a tool; coyotes hurt the local cattle industry and wildlife; concern about the range of the ammunition used; tourism for pets and hiking trails are contrary to the ordinance; why are we allowing untrained people to shoot – we should require special training; use non-penetrating bullets; people notified friends and associates about the

ordinance and the people said they would not visit Kanab if the ordinance passes; concern about drinking while hunting would make it more dangerous; spotlighting isn't hunting – it's cheating; it should be illegal; who will be out there to enforce it; it isn't sportsmanship – it's cowardly; keeping the predators in check helps the wildlife numbers; it isn't about hunting but rather about safety; it is matter of perception, causing panic; it is our culture;

Sheriff Glover explained what the current laws are.

Commissioner Clayson moved out of the public comment period after everyone who wanted to speak was given an opportunity to express their opinions and rebut as they felt necessary.

CONSENT AGENDA:

Check Edit Report approved as signed, Minutes of August 8, 2016 Meeting,

Motion to approve made by Commissioner Matson and the Motion carried with all Commissioners present voting in favor

REGULAR SESSION:

1 Ordinance 2016-9 Nighttime Hunting / Don Sprecher

Motion to develop team leaders on each side; three from each group and table the ordinance to bring it back after the group meets, made by Commissioner Smith and the Motion carried with all Commissioners voting in favor.

Commission meeting moved into the commission chambers for the rest of the meeting.

2 Ratification of the Interlocal Agreement between Kane County, Kanab City, and Kane School District, with the Municipal Building Authority for the Community Center / Attorney Van Dyke

Motion to approve and to ratify the Interlocal Agreement between Kane County, Kanab City, and Kane School District with the Municipal Building Authority for the Community Center, made by Commissioner Matson, and the Motion carried with all Commissioners Present voting in favor.

3 Revision of Kane County Code 2-3-4-C Meetings, change "monthly" to "as needed" / RDC Mary Reynolds

Shannon McBride updated the Commission regarding the need for “as needed,” to allow for more meetings.

Motion to revise Kane County 2-3-4-C Meetings, change “monthly” to “as needed,” made by Commissioner Matson and the Motion carried with all Commissioners voting in favor.

The Commission asked Attorney Van Dyke to prepare a resolution for adoption at the next meeting

4 Kane County Resource Management / Mary Reynolds

Shannon McBride updated the Commission regarding the changes suggested by Kane County

Commission instructed County Attorney to prepare the necessary resolution for the next meeting.

5 Hiring of New Position Substance Abuse Treatment Case Manager / Sheriff Glover

Sheriff Glover updated the Commission regarding the need to hire the new position of a Substance Abuse Treatment Case Manager. It corresponds to the increase from \$3.50 to \$7.50 for treatment, and this person will manage the progress, assess, and prepare case management plans then make recommendations in the treatment and therapy. Accountability is important and we welcome the evaluation and reviews of the state inspections.

The money is in the programming and non-departmental budgets and is available for transfer.

Motion to do a line item transfer and to move forward with this hire of a new position Substance Abuse Treatment Case Manager, made by Commissioner Smith, and the Motion carried with all Commissioners Present voting in favor.

Motion to recess until at 2:00 PM made by Commissioner Matson and the motion carried with all Commissioners in favor.

Commissioner Clayson brought the meeting back to order.

6 2:00 PM Introduction of Budget Officer – John Livingston – Financial Report / Commissioner Clayson

Commissioner Clayson introduced John Livingston the new Budget Officer. He will help with long-term forecasting, Budgeting and Audit issues.

John Livingston said that he would look forward to working with all the Elected Officials

7 2.0 Coalition- Joint Action and Litigation Agreement / Commissioner Matson

Commissioner Matson updated the Commission regarding the joint action and litigation agreement, with regard to planning rule 2.0. He suggested that we take the lead on this issue just as we have done with the road battle.

Commissioner Clayson asked about the three plaintiffs: Chavez County, New Mexico; Garfield County, Colorado; and Kane County, Utah. He additionally asked if there is the potential to add to the base of membership to help cover the overall financial obligation.

Commissioner Matson explained that it will cost approximately \$100,000 when all is completed.

Discussion ensued about the contract.

Commissioner Matson strongly advocated for this format “we either take action or we are acted upon. “

8 Other Business:

- Reports and schedules
Commissioner Smith had nothing to discuss this week,
Commissioner Clayson Jail meeting on Thursday; and will meet with the Road Foreman; Intergenerational Poverty meeting 23rd at 2; LEPC Wednesday; Youth Substance abuse meeting; Fuels tax conference call at 4 PM
Commissioner Matson has the Federal Lottery work list coming up; working with the Five County Planner to help with resource plans.

Closed Session:

No closed session was needed.

WHEREUPON MEETING ADJOURNED

Dirk Clayson Chairperson

Karla Johnson Clerk/Auditor

REGULAR AGENDA

ITEM #1

KANE COUNTY RESOLUTION NO. 2016 - 10

**A RESOLUTION AMENDING THE KANE COUNTY
RESOURCE MANAGEMENT PLAN**

WHEREAS, Kane County has previously adopted a comprehensive, long-range general plan, pursuant to Utah Code §17-27a-401;

WHEREAS, Kane County has also adopted, as part of its overall general plan under separate cover, the Kane County Resource Management Plan, in order to address the (1) “present and future needs of the county,” and (2) “growth and development of all or any part of the land within the unincorporated portions of the county;”

WHEREAS, as part of the Kane County Resource Management Plan, Kane County has addressed aspects of the health, general welfare, safety, transportation, prosperity, civic activities, recreational and cultural activities, and the efficient economic use of the land within the unincorporated portions of the county;

WHEREAS, as part of the Kane County Resource Management Plan, Kane County has addressed the “local customs, local culture, and the components necessary for the county’s economic stability;”

WHEREAS, the Kane County Planning Commission and the Kane County Board of Commissioners desire to amend the Kane County Resource Management Plan by adding “Section Two - Region 2: Grand Staircase Escalante”;

WHEREAS, the Kane County Planning Commission, after a duly noticed public hearing, held August 10, 2016, recommended for approval the amendments to the Kane County Resource Management Plan;

WHEREAS, both the Kane County Planning Commission and Kane County Board of Commissioners desire to implement the recommended changes;

WHEREAS, the Kane County Board of Commissioners, in a duly noticed public meeting, received the recommended amendments to the Kane County Resource Management Plan and desires to enact the recommendations;

NOW THEREFORE, BE IT RESOLVED BY THE KANE COUNTY BOARD OF COMMISSIONERS, IN AND FOR KANE COUNTY, STATE OF UTAH, AS FOLLOWS:

The Kane County Resource Management Plan shall be amended by adding the attached “Section Two - Region 2: Grand Staircase Escalante.”

This resolution and the corresponding changes to the Kane County Resource Management Plan shall be effective immediately upon passage. A copy of this resolution shall be deposited in the Office of the County Clerk.

ADOPTED this 10th day of September, 2016.

ATTEST:

KARLA JOHNSON
Kane County Clerk

Dirk Clayson, Chair
Board of Commissioners
Kane County

Commissioner Clayson voted _____
Commissioner Matson voted _____
Commissioner Smith voted _____

Section Two

Region #2 – Grand Staircase

Statement of Intent:

Kane County supports multiple-use management of the monument and will coordinate with the various agencies to maintain appropriate balance among all users and uses. The county defines multiple-use as the consumptive and non-consumptive uses historically and traditionally allowed to occur on federal and state lands within the county. These uses include, but are not limited to: livestock grazing, hunting, fishing, mining, mineral exploration and extraction, recreation, wildlife habitat management, telecommunications, water resource use, protection and development of timber/woodland products, utility corridors, county transportation, and circulation roads and corridors.

Introduction:

The Grand Staircase Escalante National Monument is an immense expanse of sedimentary rock layers that climb like a staircase out of the Grand Canyon (in Arizona) through the middle of Kane County into Garfield County on the Colorado Plateau. The name was coined by geologist, Clarence Dutton, in the 1870s when he “conceptualized this region as a huge stairway...with the cliff of each layer forming giant steps.”¹ It was divided into five steps from the youngest (top) rocks to the oldest, by color: pink cliffs, grey cliffs, white cliffs, Vermillion cliffs, and Chocolate cliffs.

This area of Utah has been a part of the public land base since the late 1800s when the boundary lines were drawn for private ownership and open range grazing. It was first under the Department of the Interior when it began its geological survey of the western territories.² When the Bureau of Land Management was formed in 1946 after merging the General Land Office and Grazing Service, this public range fell under the jurisdiction of the BLM.³

As a Monument the Grand Staircase-Escalante National Monument was created on September 18, 1996 by Presidential Proclamation 6920.⁴ It encompasses 1.9 million acres of land that traverses Kane and Garfield Counties. The majority of the Monument (68%) lies in Kane

¹ Clarence E. Dutton, geologist, assigned special duty by J.W. Powell in 1875 to survey the Rocky Mountain Region, then continued to work for the U.S. Geological Survey. He worked with Powell and others to establish some of the basic principles of structural geology. www.encyclopedia.com/topic/Clarence_Edward_Dutton.aspx and <https://en.wikipedia.org/wiki/Grand_Staircase-Escalante_National_Monument>

² U.S. Department of the interior, History, www.doi.gov/howeare/history downloaded 3/15/16

³ Ibid.

⁴ Proclamation 6920-Establishment of the Grand Staircase-Escalante National Monument, September 18, 1996, by the President of the United States, William J. Clinton. www.gpo.gov/fedsys/pkg/WCPD-1996-09-23-Pg1788.pdf Downloaded December 1, 2015.

County, which accounts for almost half of the county's acreage (49%).⁵ On the east it abuts the Glen Canyon National Recreation Area; on the west it just over-runs Johnson Canyon Road. To the north, the Monument runs through Garfield County (above the town of Boulder), and to the south, certain sections run adjacent to the Utah/Arizona border, interrupted by segments of State Institutional Trust Lands (SITLA).

Geographically, the Monument is divided into three broad sections: (from west to east) the Grand Staircase section, the Kaiparowits Basin section, and the Escalante (Canyon) section [the northern part of the Kaiparowits section and most of the Escalante section is in Garfield County]. According to studies, "The Grand Staircase section is a broad feature that encompasses the western third of the monument and consists of a series of topographic benches and cliffs that, as its name implies, step progressively up in elevation from south to north."⁶ The Kaiparowits section is mostly made up of the Kaiparowits Plateau, which "is a series of plateaus, buttes and mesas...about 1,650 square miles in the central part of the monument."⁷ The southern portion of the plateau crosses over into the Glen Canyon National Recreation Area. The plateau's eastern boundary is the Escalante (Canyon) section, and "provides a web of multi-hued, steep, narrow canyons and slickrock, sculpted in the drainage basin of the Escalante River."⁸ The change in elevation can be extreme, and there are very few transportation routes through these areas.

Enabling Legislation & Management

The Monument is managed by the U.S. Dept. of Interior through the Bureau of Land Management (BLM). It is subject to a combination of federal and state laws as well as county land use ordinances, via the Federal Land Policy Management Act (FLPMA), National Environmental Policy Act (NEPA), Taylor Grazing Act (TGA), National Historic Preservation Act, Utah Code 63J-4-401, Utah Rangeland Health Standards and Guidelines, Monument Management Plan(s), and Kane County Land Use Ordinances (specifically, Title 9, Chapter 27, Escalante Region Multiple Use/Multiple Functions Grazing Zone) and this Resource Management Plan.

The Monument contains a large amount of Kane County's natural resources from grazable pasture to mineral reserves. But as a monument the use is restricted, which has stifled economic growth throughout the county. Federal land management practices have eroded the ability to make a living through cattle ranching without regard for history, culture and economics. Large swathes of coal reserves in the Kaiparowits Plateau (the center section of the Monument) are untouchable because monument designation literally took it off the market. Kane County

⁵ H. Doelling, R. Blackett, A. Hamblin, J.D. Powell, and G. Pollock, "Geology of Grand Staircase-Escalante National Monument, Utah," pg. 1, *Geology of Utah's Parks and Monuments*, 2000 Utah Geological Association Publication 28, D.A. Sprinkel, T.C. Chidsey Jr., and P.B. Anderson, editors.

⁶ *Ibid.* pg.3

⁷ *Ibid.* pg.4

⁸ *Ibid.* pg.4

supports multiple-use/sustained-yield management⁹ of the monument and will coordinate with the various agencies to maintain appropriate balance among all users and uses.

As stated in Section One of this Resource Management Plan, the federal government controls the majority of land within the county. Viable and effective use of this (and private lands) is totally dependent upon how federal and state lands are managed. Kane County asserts that Proclamation 6920 protects livestock grazing on the Monument by stating, *“Nothing in this proclamation shall be deemed to affect existing permits or leases for, or levels of, livestock grazing on Federal lands within the monument; existing grazing uses shall continue to be governed by applicable laws and regulations other than this proclamation.”* And that *“The establishment of this monument is subject to valid existing rights.”*

Prior to monument designation, the Taylor Grazing Act¹⁰ (TGA) established grazing rights for ranchers through a permit process. Although grazing fees do not convey any *“...right, title, interest, or estate in or to the lands”* (§315b) federal courts have interpreted the TGA preamble to *“(1) provide for the most beneficial use possible of the public range in the interest of ranchers themselves but also the public at large¹¹; (2) “... to define their **grazing rights** (emphasis added) and to protect those rights, by regulation, against interference¹²; and (3) to stabilize the livestock industry dependent upon the [grazing] public range”¹³ There is evidence that Congress intended for *“public domain grazing patterns and forage use quantities [AUMs] to be recognized as grazing use (usufructuary) rights subject to Fifth Amendment protection from takings.”¹⁴**

Kane County asserts that citizens who hold grazing permits on the Monument (and elsewhere) have an inchoate, contingent right that federal courts have recognized (see above). *“...rights under the Taylor Grazing Act do not fall within the conventional category of vested rights in property. Yet, whether they be called rights, privileges, or bare licenses, or by whatever name, while they exist they are something of real value to the possessors and something which have their source in an enactment of the Congress.”¹⁵ “...the power of a court of equity may be invoked to protect such right, even if the operator does not own...”¹⁶ the property.*

Kane County asserts *“Federal agencies that administer land within the Escalante Region Grazing Zone [aka Monument] shall coordinate with Kane County to develop, amend, and implement land and resource management plans and implement management decisions that are consistent with the purposes, goals, policies, and provisions described...to the maximum extent*

⁹ Utah Code, 63J-4-401(6)(a)(i) and (ii), asserts “the citizens of the state are best served by applying multiple-use and sustained-yield principles in public land use planning and management and multiple-use and sustained-yield management means that federal agencies should develop and implement management plans and make other resource-use decisions...”

¹⁰ Taylor Grazing Act, Title 43, Chapter, §315-316. Established June 28, 1934

¹¹ Red Canyon Sheep Co. v. Ickes, 1938, U.S Court of Appeals for D.C.

¹² United States v. Archabal, 1940 District Court, Nevada

¹³ Ibid.

¹⁴ Frederick Obermiller, Professor of Ag & Resource Economics, Oregon State University, Corvallis, OR. “Did congress intend to recognize grazing rights?” Rangelands 18(5), October 1996.

¹⁵ Red Canyon Sheep Co. et.al v. Ickes, May 27, 1938, Secretary of the Interior, United States Court of Appeals for the District of Columbia, 315.

¹⁶ Goldfield Consol. Mines Co. v. Goldfield M.U. No. 220, 159 F. at page 512, C.C.D. Nev. 1908 Downloaded from <digital.library.umt.edu/ark:/67531> April 26, 2016

*allowed under federal law.*¹⁷ Kane County maintains that according to FLPMA, NEPA, and TGA, “...their implementing regulations and policies contain reciprocal requirements concerning cooperation, consultation and coordination by federal agencies with state and local governments and such cooperation needs to be fully implemented by Kane County and the relevant federal agencies.”¹⁸

Kane County is working with the BLM in a coordinated fashion to maintain best practices for the Monument. Kane County promotes responsible management, enhancement, and development of existing and future livestock grazing and other resources. Accountable planning provides protection for the resources that established the customs, culture, economic foundation, and values of the county. This includes the responsible development of abundant deposits of energy and mineral resources such as oil, natural gas, oil shale, oil sands, coal, gold, uranium, and copper, which are compatible with grazing activities in the region.

National Environmental Policy Act

Preparation of land and natural resource management plans by BLM and the Forest Service is a major federal action requiring the preparation of an Environmental Impact Statement (EIS) under the provisions of the National Environmental Policy Act (NEPA). See 42 U.S.C. § 4231 et seq.

NEPA requires federal agencies to fully disclose the nature and condition of the environment within the area of interest. Under NEPA, agencies must formulate various alternatives for proposed management, and to compare those alternatives to a “no-action” alternative of continuing the current management scheme. NEPA specifically requires the agency preparing the EIS to seek decisions that, “attain the widest range of beneficial uses of the environment without degradation,” “preserve important historic, cultural and natural aspects of our national heritage,” “achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life’s amenities.” 42 U.S.C. 4331 (b).

The development of an EIS by a federal agency as part of the process to decide upon a land and resource management plan or proposed project has a number of well established steps. Each of these steps provides an opportunity for comment by local government based upon their own plans and policies. These steps, in general, are:

- The “scoping” of the issues;
- Preparation of an analysis of the management situation;
- Preparation of the various alternatives with the associated necessary management scenario and conditions;
- Issuance of a “draft EIS” for public comment;
- Issuance of a “final EIS” and the “proposed record of decision” (ROD), which lays out the proposed final decision, including the terms and conditions for management of the lands and natural resources for the life of the plan or for that specific project; and

¹⁷ Kane County Land Use Ordinance, Title 9, Chapter 27, (9-27A-3 (H)).

¹⁸ Ibid. 9-27A-3(I).

- Issuance of the proposed ROD is followed by a period for protest by interested parties, which, upon resolution of the protests, is followed by adoption of the ROD and implementation of the plan.

The Governor of the State of Utah is given an opportunity for a consistency review of BLM plans immediately following the issuance of the proposed Record of Decision. BLM is required to “identify any known inconsistencies with State or local plans, policies, or programs,” and to “assist in resolving, to the extent practical, inconsistencies between federal and non-federal government plans.” The Governor is given sixty (60) days to “identify inconsistencies and provide recommendations in writing” in response. The BLM must accept the recommendations of the Governor if the BLM State Director determines the recommendations “provide for a reasonable balance between the national interest and the State’s interest.” 43 U.S.C. § 1712(b) (9); 43 C.F.R. § 1610.3-2(e); see also 40 C.F.R. § 1506.2(d).

The Federal Council on Environmental Quality (CEQ) has issued regulations related to the implementation of NEPA. One of these regulations provides for the elimination of duplication with state and local processes. The regulation requires federal agencies to cooperate with state and local agencies to the fullest extent possible to reduce duplication between NEPA and state and local requirements. This cooperation specifically includes:

- Joint planning processes;
- Joint environmental research and studies;
- Joint public hearings; and
- Joint environmental assessments. 40 C.F.R. § 1506.2(b)

The Council on Environmental Quality has also supported an invitation to state and local governments to become cooperating agencies in the preparation of federal land and natural resource management plans and associated EIS’s. The invitation to become a cooperating agency is specifically based upon the state or local government’s position, having jurisdiction by law in the planning area, or professionals holding special expertise in an issue that will be addressed in the analysis or decision (June 24, 2005, memo from James Connaughton, Chairman of the CEQ). This status does not relieve the federal agency of the responsibility as the decision-maker, and does not guarantee a decision that the cooperating agency may necessarily favor. Cooperating agency status does allow the cooperators to participate in the scoping process, the inventory of data and analysis, the preparation of alternatives, the impact analysis, and in the preparation of the draft and final EIS’s.

Kane County understands that as a cooperating agency, the input of the county may or may not be incorporated into the federal plans as provided by the cooperating agency. However, federal law distinguishes between input from a cooperating agency and the requirement of coordination.

NEPA requires federal agencies to coordinate the analysis with local governments. Congress declared the National Environmental Policy Act to be the creation and maintenance of conditions under which man and nature can exist in “productive” harmony and to carry out this policy, coordinate the federal plans with state and local governments.

(a) “The Congress...recognizing further the critical importance of restoring and maintaining environmental quality to the overall welfare and development of man, declares that it is the continuing policy of the Federal Government, in cooperation with State and local governments,...to use all practicable means and measures...to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic and other requirements of present and future generations of Americans.

(b) In order to carry out the policy set forth in this chapter, it is the continuing responsibility of the Federal Government to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate federal plans, functions, programs and resources...” 42 U.S.C. § 4331.

Congress defined coordination to mean that local plans and policies are not only to be considered during the planning process, and in this case the environmental analysis, but the federal planning efforts work to be consistent with these plans. NEPA and the corresponding Council on Environmental Quality give specific direction to the federal agencies as to how this is to be achieved.

First, the agency is to “study, develop and describe appropriate alternatives to recommend courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.” 42 U.S.C. § 4332(e). When there is a conflict between the federal proposal and the local plan and policies, the analysis must include an alternative that resolves this conflict.

Second, the agency is required to resolve these conflicts early in the process. “Agencies shall integrate the NEPA process with other planning at the earliest possible time to insure that planning and decisions reflect environmental values, to avoid delays later in the process, and to head off potential conflicts.” 40 C.F.R. § 1501.2. This requires that coordination with the county begin early in the development of the EIS in order to identify and resolve policy conflicts before they cause delays. This also infers if the agency does not perform this coordination early, and conflicts are later identified, the obligation is on the agency to delay the study until resolution can be made.

Third, the position of the county should be clearly stated and identified in the analysis, especially if it is in conflict with the proposal, so that decision makers and the public can weigh this in their analysis of the overall impact of the action. In the Environmental Consequences section of the study, there should be a section discussing the “Possible conflicts between the proposed action and the objectives of Federal, regional, State and local...land use plans, policies and controls for the area concerned.” 40 C.F.R. § 1502.16(c).

Fourth, where there is inconsistency with the local plans, the federal agency needs to provide a reasonable explanation as to how the agency will reconcile this conflict. “[S]tatements shall discuss any inconsistency of a proposed action with any approved State or local plan and laws (whether or not federally sanctioned). Where an inconsistency exists, the statement should describe the extent to which the agency would reconcile its proposed action with the plan or law.” 40 C.F.R. § 1506.2(d).

Resolving the specific inconsistencies between the federal proposal and local plans and policies is to be done in the coordination process, government-to-government. While the local governments must be invited to participate as a cooperating agency in the development of the EIS, the federal government is required to coordinate that same decision making process with local governments for the purpose of resolving conflicts between federal and local plans.

It is the policy of Kane County to require coordination of all federal agencies in relation to federal land management decisions, including with NEPA studies. The county may also participate as a cooperating agency as appropriate.

Coordinated Resource Management Plans

Many ranches in the Grand Staircase-Escalante National Monument (GSENM) are comprised of several land ownerships or lease arrangements. For example, they may contain privately owned or leased land, BLM permits, forest permits, and/or State leases. Management decisions made for one type of land-ownership arrangement has consequences for the remainder of the ranch unit. Therefore, coordinated management plans that consider the entire ranch unit are preferable to piecemeal decisions. There are also entities other than land owners who may have legitimate interests in the management planning effort. For example, county governments have a stake in roads, public safety, tax revenues, and overall economic welfare of the county. State game and fish agencies have authority over wildlife management on all categories of land ownership. Conservation districts and other agencies such as Natural Resource Conservation Service may also be involved. Coordinated plans that are agreed upon by all interested parties help to avoid future conflicts and unintended consequences. Therefore, the county supports the development of coordinated resource management plans for the Monument.

Federal and State Resource Management Planning

It is Kane County's policy to coordinate with public land management agencies in the planning and management processes. The county's participation and responsibilities will be guaranteed by, and contingent upon, a formal coordination agreement. Any formal county coordination agreement shall be contingent upon the county's full involvement at the earliest stage of the proposed process. The county would like to see increased coordination among the county, the Bureau of Land Management, U.S. Forest Service, National Park Service, Utah Department of Natural Resources, and other land management agencies. It is the county's belief that all land use decisions must be based on valid science, sound principles of consensus building, and coordination of local interests.

The position of Kane County is that weight given to public comment and opinion should be directly proportionate to the geographic and economic impact of the decision. The county policy is to provide clear and timely comments, and encourage its residents to do the same.

It is the preference of Kane County that managing agencies coordinate with the county on all planning at the earliest possible time. The county has limited personnel to dedicate to public land planning. Nevertheless, the county will make every effort to coordinate planning documents and achieve consistency. Kane County requests full coordination by all federal land

managers to achieve consistency with Kane County's Land Use Ordinance, Resource Management Plan, and General Plan, and any other plans which comply with federal law.

It is the policy of Kane County that federal and state land management agencies:

1. Establish effective government-to-government relationships with Kane County.
2. Identify a county relations liaison to serve as the first point of contact with the county commission and also the person who will generally initiate agency contact with the county.
3. Implement federal land management programs and activities consistent with the county's ordinances, and respect the county's rights in fulfilling the federal government's legally mandated coordination responsibility.
4. Manage federal lands and resources in coordination with the county.
5. Work to reduce or remove legal or administrative program impediments that inhibit the agency's and the county's capacity to work directly and effectively with each other.
6. Consult with the county on matters that may affect the public's rights and interests.
7. Promptly notify the county at the earliest opportunity of proposed policy, plans, projects or actions that may affect the public's rights or interests in order to provide the county an opportunity for meaningful dialogue on potential implications and effects.
8. Develop, in consultation and collaboration with the county, agreements and statements of relationships that help clarify the county's rights and interests, and set forth procedures and protocols for consultation, including the points of contact. Involve designated county representatives, including staff, in the development of proposed policies, plans, projects, or actions, where appropriate.
9. Involve the county early in the planning process, and in the preparation of in-depth socio-economic information.
10. Fully consider recommendations by the county to address county concerns on proposed decisions.
11. *Inform the county as to how its information and recommendations were considered in public land management decisions, including explanations, particularly in the event that county input was not adopted or incorporated.*
12. Document the process and actions taken to consult with the county, the results of those actions, and how the public land manager's final decision was communicated to the county. This consultation review and monitoring process shall involve the county officials and representatives; and
13. Conduct annual planning meetings for specific projects and other multiple-use interests in affected areas that include participation by livestock permittees, affected adjacent land owners, and county representatives.

Grazing on the Grand Staircase-Escalante National Monument:

Kane County recognizes there are two main bodies of law that govern the Grand Staircase-Escalante National Monument (GSENM) - Presidential Proclamation 6920 (the "Proclamation") and the Antiquities Act, 16 U.S.C. § 431.¹⁹ Pursuant to the Antiquities Act, the Proclamation set

¹⁹ The Antiquities Act, in relevant part, provides: "The President of the United States is authorized, in his discretion, to declare by public proclamation *historic landmarks, historic and prehistoric structures, and other*

aside federal land within the GSENM for the purpose of protecting certain *historic and scientific objects*. The Proclamation also contains express direction for the protection of grazing: “Nothing in this proclamation shall be deemed to affect existing permits or leases for, or levels of, livestock grazing on Federal lands within the monument; existing grazing uses shall continue to be governed by applicable laws and regulations other than this proclamation.”

Congress also enacted the Omnibus Public Land Management Act of 2009 which created the National Landscape Conservation System. However, the Act did not alter the BLM’s obligation to manage the GSENM in accordance with specific requirements of the Proclamation, including the President’s express direction that grazing at existing levels is consistent with the purposes for which the monument was created. The Act specifically states that nothing “enhances, diminishes, or modifies any law or proclamation” under which a national monument or conservation area was established. 16 U.S.C. § 7202(d)(1). As a result of this language in the Act, the **Proclamation** is the controlling document regarding grazing practices on the GSENM. Furthermore, because the **Proclamation** expressly recognizes grazing as an ongoing, authorized land use within the monument it establishes that creation of the monument does not affect how grazing is managed. Accordingly, the creation and management of the GSENM may not be used as a basis to limit or restrict grazing.²⁰ Grazing stands on an equal footing with the conservation and protection of the Monument’s objects; it is not a discretionary use. The deliberate inclusion of continued grazing rights in the Proclamation identifies and protects grazing as a pre-existing use on federal land within the GSENM.

A significant issue to Kane County is the fact that there has been a dramatic decline in grazing levels since the Proclamation was issued. The decline in grazing levels has been accompanied by declines in rangeland condition due to encroachment of pinyon, juniper, creosote, and other woody species; the spread of non-native species such as cheatgrass and red brome; and the deterioration of water features (declining watershed conditions), fencing and other range improvements. These changes have altered the quality of the GSENM’s rangeland ecosystem, harming wildlife dependent on rangeland habitat while reducing the monument’s livestock carrying capacity (reducing available forage).

Kane County recognizes the need for management actions to increase native forage production, restore water features and other range improvements, and prevent the spread of invasive non-native species that are incompatible with the monument’s native grassland ecosystem. Consistent with the foregoing and subject to all legal authorities, the county promotes/seeks to:

- increase the level of grazing by domestic livestock within the GSENM in accordance with the Proclamation’s recognition of livestock grazing as an existing and authorized monument use;

objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments, and may reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected.” 16 U.S.C. § 431 (emphasis added)

²⁰ See, e.g., BLM Manual Pt. 6100 § 1.6(B) “Land use planning decisions for each NLCS unit must be consistent with the purposes and objectives of the designating proclamation or Act of Congress.” (July 13, 2012)

- increase the monument’s carrying capacity through active management and improvement of rangeland resources;
- implement appropriate management strategies to increase native forage production for the benefit of wildlife and domestic livestock;
- address the encroachment of pinyon, juniper and other woody species through a treatment plan and other management actions to improve the condition of rangeland within the GSENM;
- initiate a management program to remove and control invasive non-native species and re-establish native grasses;
- evaluate and initiate fencing and other range improvements needed to support livestock grazing within the GSENM, and initiate a program to restore and replace such features;
- evaluate and initiate essential water features, specifically for obtaining “yield in water” and recharge to aquifers off the public domain.

Another highly concerning issue Kane County has regarding the current management situation for the GSENM is the manner in which recreation is being elevated above grazing. The BLM has created special recreation management areas (SRMAs) within the monument with emphasis on the enhancement of recreation users’ experiences. Special attention is being given to whether the recreation users’ experience is adversely affected by livestock grazing.²¹ Though Kane County recognizes recreation is a growing use for the monument, it is not a protected use, since recreation is not specifically addressed in the Proclamation creating the GSENM.

The specific *objects* protected pursuant to the Antiquities Act are geological, paleontological, archeological, historic, and biological. The Act cannot be used to set aside land for recreational purposes and there is no evidence that President Clinton attempted to do so. Livestock grazing is recognized in paragraph 13 of the Proclamation as an existing use that is compatible with the purposes for which the GSENM was created. Recreational uses may occur within the monument only to the extent they are compatible with the protection and preservation of the historic and scientific objects and other land uses specifically identified in the Proclamation, including grazing, hunting and fishing.

Kane County supports recreational uses of the GSENM, but as a secondary use that must be carefully managed and, where necessary, prohibited to prevent harm to monument objects and other conflicts with the purpose of the Proclamation. Given that grazing is specifically recognized as a historic and ongoing use in the Proclamation, while use of the GSENM for recreation is not, it is critical to recognize the proper analysis is whether recreational uses adversely affect grazing. To view it otherwise is in direct conflict with the Proclamation and the Antiquities Act.

Kane County believes there are many ways to mitigate potential conflicts between recreational users, livestock, and wildlife (*see ‘Collaboration to Protect Wildlife’ later in this section for an example*). Because the GSENM was not created to provide recreational opportunities, it is not a

²¹ Study by Colorado Mesa University analyzing recreation activities within the Monument. Based on a focused analysis of the Hole-in-the-Rock area, the study found that 22% of respondents identified livestock or evidence of them as a quality that diminishes the area’s specialness. The largest contributors to diminished specialness were vandalism, overcrowding, lack of solitude, additional improvements, and damage to soils and vegetation. (2014)

recreation area and cannot be managed as such. It was created under the Antiquities Act to protect discrete historic and scientific objects. Nothing in the Proclamation suggests the BLM can restrict grazing levels to enhance the experience of backcountry enthusiasts. The 1999 Monument Management Plan²² stated in its *Overview* that visitor access would be restricted and the focus would be on the periphery in order to protect monument objects. It also stated:

“Developed recreational and interpretive sites will be limited to small areas of the Monument...Undeveloped recreation will be accommodated as long as no significant impacts to Monument resources will occur. Limits on large groups, commercial uses, and even limits on overall numbers of individuals will be used when needed to protect impacts to Monument resources.”²³

Kane County supports the recreation industry, but not to the detriment of ranching and livestock grazing. Simple economic calculations show that recreation and tourism cannot replace the annual income that ranching and livestock generates for the county. (See *‘Economic and Cultural Report on Livestock Grazing in the Grand Staircase-Escalante National Monument’* by Dr. Gil Miller later in this section.) It must also be recognized that ranching and grazing are a critical part of the cultural heritage for the county as well as being a part of an American icon (the cowboy). With that comes multi-generational knowledge of conditions on the landscape as well being an obvious domestic food source for many communities.

Ranching and livestock grazing are a major industry for Kane County. In an effort to keep it healthy and viable, the county has developed its own *Enhanced Grazing Plan* for the GSENM because it recognizes those who work with the land are the best stewards for it. This industry has served to protect the landscape for over 150 years and when allowed to do what’s right; when allowed to make improvements, develop water features, repair roads, fences, troughs, and respond to the land as they instinctively know how, the results become self-evident. Allowing active management by land stewards who have feet on the ground will create improved results because they have a vested interest in keeping the GSENM healthy and productive.

Kane County’s Enhanced Grazing Plan:

Kane County’s Enhanced Grazing Plan (EGP) is a range improvement plan that proposes to actively maintain and improve rangeland health, and restore permitted AUMs by employing a suite of resource improvements, vegetative treatments, adaptive management principles and innovative livestock management practices. The foremost goal is to maintain, enhance and restore healthy rangeland ecosystems to produce a wide range of public values such as wildlife habitat, livestock forage, recreation opportunities, (make available) clean water, healthy vegetation, soils, and cultural resources; and protect Monument objects including grazing and functional watersheds. As stated in the Proclamation 6920: “Nothing in this proclamation shall be deemed to affect existing permits or leases for, or levels of, livestock grazing on Federal lands within the Monument; existing grazing uses shall continue to be governed by applicable laws and regulations other than this proclamation.”

²² Grand Staircase-Escalante National Monument Management Plan; U.S. Dept. of the Interior, Bureau of Land Management, November 1999. Overview, pgs iv-v.

²³ Ibid. pg. 5

This plan adopts an *adaptive management* strategy. Adaptive management is a formal, systematic and flexible approach to learning from the results of management actions. It accommodates change, and then, improves upon the existing management. It involves synthesizing existing knowledge, exploring alternative actions, and making explicit forecasts about results. Management actions and monitoring programs are carefully designed to generate reliable feedback which clarifies the reasons underlying results. Actions and objectives are then adjusted based on this feedback; understanding is then improved to progress toward the desired outcomes. In addition, decisions, actions, and results are carefully documented and communicated to others, so the knowledge gained from the experience is passed on rather than lost when individuals move or leave the organization.

The adaptive management process is flexible and generally involves four phases: planning, implementation, monitoring, and evaluation. As the managing agency obtains new information, it is able to evaluate the data and other resource information to refine and update its desired outcomes, management actions and allowable uses. This allows for the continual refinement and improvement of management prescriptions and practices.

Land Use Plan decisions are not always immediately adaptable; they have to go through a public meeting process to be voted on; then adapted by ordinance. It takes time to go through the local Land Use Authority, then County Commission for implementation. If public lands are involved the process will take time. Whatever guidelines or policies in place, the process can be encumbering. But regardless the goals and objectives, allowable uses, management actions and special designations, they are *amendable*. Implementation or activity-level decisions *can be adapted*. Future activity-level plans follow NEPA procedures and involve the public.

Specific Goals of the Enhanced Grazing Plan:

1. Manage public lands for multiple use, sustained yield within the framework of applicable laws, regulations and agency policies.
2. Manage resources to protect objects identified in the Proclamation.
3. Implement adaptive management to meet resource objectives in spite of [the restrictions/limitations of] the Monument Management Plan.
4. Stocking rates will apply until individual allotment plans are completed under a NEPA analysis; adaptive management can then be implemented.
5. Apply rangeland standards and guidelines to the decision area. The expectation is that these standards *will be applied* and utilized by qualified experts.
6. Implement ecosystem management in an open, cooperative, responsive atmosphere in accordance with the law.
7. Maintain, improve, enhance and restore (where needed) healthy ecosystems and habitat to support viable populations of livestock and wildlife species while reducing habitat loss and fragmentation.
8. Protect and enhance cultural, ethnographic and natural resource values using a diversity of tools.
9. Provide a variety of recreational, educational and interpretative opportunities compatible with livestock grazing.

10. Reduce conflicts between users and user groups that are consistent with local plans and ordinances.
11. Enhance the viability of rural communities by providing opportunities for grazing and recreation to co-exist within the ecosystem, and enable the ecosystem (through restorative efforts) to sustain both.
12. Recognize the unique cultural, historical, and social values of the Grand Staircase, to develop a plan that manages the land and protects the heritage it engenders.

Objectives of the Enhanced Grazing Plan:

1. Increase forage with rangeland improvements aimed at restoring suspended and unused AUMs.
 - a.) Maintain access and infrastructure for normal ranching operations on the Monument.
 - b.) Provide stockwater improvements to increase effective grazing within allotments.
 - c.) Reduce or eliminate livestock-related rangeland resource problems on all allotments not meeting rangeland health standards while maintaining a production goal of livestock forage in the long term.
2. Manage grazing as a dynamic system (adaptive management)
 - a.) Monitor the assemblage and response of plant species.
 - b.) Actively match the stocking rate to the resource availability.
 - c.) Distribute animal use spatially to provide a diversity of plant offerings.
 - d.) Alter the frequency and duration of grazing and recovery periods based on monitoring data.
 - e.) Redefine allotments based on rangeland conditions.
3. Utilize livestock grazing as a wildfire management tool to control noxious and invasive weeds. (i.e. Fuel reduction through grazing).
4. Use the Monument as a laboratory to research innovative grazing techniques.
 - a.) Employ experimental approaches to advance and improve our knowledge of rangeland health and resilience.
5. Accommodate recreation activities by reducing livestock recreation conflicts within the Monument. (i.e. Use signage/educational brochures covering cowboy heritage).
6. Recognize livestock grazing constitutes a cultural landscape, a traditional cultural use, and an ethnographic resource within the Monument.
7. Integrate livestock use and associated management practices with other multiple-use needs and objectives to maintain, protect and improve rangeland health.
8. Enhance/restore watersheds and rangeland.
 - a.) Employ strategic and aggressive pinyon-juniper removal.
 - b.) A mosaic of non-invasive perennial and annual vegetation communities would be present across the landscape with diversity of species, canopy, density, and age class in accordance with ecological site potential.
 - c.) Protect, enhance, and/or restore ecological processes and functions by allowing the use of tools that are *necessary* and *appropriate* to mitigate adverse impacts of allowable uses and undesirable disturbances, which contribute to meeting (or not meeting) the *Utah Standards For Rangeland Health*.

- d.) Sustain or re-establish the integrity of the sagebrush communities to provide the quantity, continuity and quality of habitat necessary to maintain sustainable populations of sagebrush-obligate species.
- e.) Contain or reduce invasive plant species from existing extent; prevent establishment of new invasive species through early detection and rapid response actions.
- f.) Restore native and non-native species to meet desired plant community objectives where appropriate.
- g.) Maintain health of ponderosa pine stands within the decision area.
- h.) Maintain and/or restore riparian areas to proper functioning condition, or make progress towards proper functioning condition, where activities have been identified as contributing to riparian impairment.
- i.) Ensure water availability for multiple-use management and functioning, healthy riparian and upland systems.

Actions of the Enhanced Grazing Plan:

1. Restore all suspended and unused AUMs (pre-Monument total 106,000 AUMs; greater if and when the forage allocation justifies the increase; estimate range includes 146,000+ AUMs calculated for EGP).
2. Designate all lands currently used, and restore additional; manage all livestock grazing allotments within the decision area as *available* for livestock grazing, where the terrain, slope, and landscape allow for it.
 - a.) Manage the previously unavailable Dry Hollow allotment as available for livestock grazing and combine with the Boulder Creek allotment. Do not allocate additional AUMs above those permitted for the Boulder Creek allotment.
 - b.) Manage the previously unavailable Flag Point allotment as available for livestock grazing and combine with the White Sage allotment. Do not allocate additional AUMs above those permitted for the White Sage allotment.
 - c.) Manage the previously unavailable Varney Griffin allotment as available for livestock trailing only with 50 AUMs.
 - d.) Maintain Little Bowns Bench, the Wolverine Pasture of the Deer Creek Allotment, and the Phipps pasture of the Phipps allotment as available for livestock grazing as *forage reserves*. Maintain structural range improvements such as fences and water developments so that forage reserves will be ready for use when needed. Graze every 1 - 3 years to prevent/maintain plant vigor. Grazing in winter would remove decadent vegetation.
[Note: This action is a placeholder pending input from the State/Counties on whether to retain and expand forage reserves or eliminate forage reserves. If no one needs to use the reserve, a neighbor/allotment holder can use it for a year to help maintain it.]
 - e.) Manage the Antone Flat allotment (previously un-allotted) as unavailable for livestock grazing for watershed and wildlife concerns.
[Note: This action is a placeholder pending input from the State/Counties.]
 - f.) Maintain the following areas as unavailable for livestock grazing:

[Note: the following actions are subject to change based on input from State/Counties and Glen Canyon NRA. The actions have been identified here as a placeholder. Use mitigation and/or education action where possible.]

- Big Bowns Bench (River pasture and a portion of Horse Canyon pasture) (riparian values and livestock/recreation use conflicts; use mitigation)
 - Deer Creek (Cottonwood and River pastures) (riparian values and livestock/recreation use conflicts; use mitigation)
 - Escalante River (riparian values and livestock/recreation use conflicts; use mitigation/education methods)
 - Harvey's Fear (bighorn sheep conflicts; use mitigation, if possible)
 - Lower Calf Creek (riparian values and livestock/recreation use conflict; use mitigation/education methods)
 - McGrath Point (riparian values and livestock/recreation use conflicts; use mitigation/education methods)
 - Muley Twist (unsuitable for grazing)
 - Navajo Bench (bighorn sheep conflicts; use mitigation, if possible)
 - Phipps (River pasture) (riparian values and livestock/recreation use conflicts; use mitigation/education methods)
 - Rattlesnake Bench (unsuitable for grazing)
 - Rock Creek-Mudholes (Dry Rock Creek and Middle Rock Creek pastures)
 - Saltwater Creek (riparian values and livestock/recreation use conflicts; use mitigation/education methods)
 - Spencer Bench (bighorn sheep conflicts; use mitigation, if possible)
 - Steep Creek (riparian values and livestock/recreation use conflicts; use mitigation/education methods)
3. Use an interdisciplinary allotment evaluation process to provide specific guidance and actions for managing livestock grazing.
 4. Allocate long-term increases and decreases in forage on a case-by-case basis based on an allotment-specific analysis through adaptive management principles.
 5. Allow motorized access to range improved within Wilderness Study Areas according to the *Interim Management Policy for Lands Under Wilderness Review*; allow motorized access to range improvements on all existing roads, and as needed, outside of WSA's.
 6. Consider requests for changes in kinds of livestock on a case-by-case basis, and after review, evaluate potential impacts on riparian and upland vegetation and other resource uses.
 7. Create a 'livestock preference' in areas accommodating visitors or where water is allocated to livestock.

8. Create a 'visitor preference' in areas designated as a focal point for visitors and only where water has been allocated to domestic/culinary uses.
9. Develop additional water for vegetative treatments, livestock and wildlife (yield in water source).
10. The research/reference areas are not to exceed 0.5% in any allotment, and not exceed 0.5% cumulative.
11. Protect soils through desirable vegetation.
12. Restore (some) landscapes to pre-1850 conditions; eradicate Tamarisk, Russian olive.
13. Restore vegetation to accommodate desired condition and meet ecological site description conditions.
14. Use native and non-native species to optimize rangeland health, forage and productivity levels.
15. Restore/maintain previous seedings to optimum conditions.
16. Control county and state undesirable species.
17. Use all improvements in forage to restore full AUMs.
18. Implement noxious weed and invasive species control actions per national guidance and local weed management plans, in cooperation with local, state and federal agencies, affected counties, adjoining private land owners, and other interests directly affected.
19. Monitor soil crusts to 70% current level and inventory, if necessary, then use adaptive management.
20. Apply *Utah Standards for Rangeland Health* to all rangelands.
21. Apply *Guidelines for Grazing Management* (1997a) and *Guidelines for Recreation Management for Public Lands in Utah* (no date) for maintenance and rehabilitation of rangelands.
22. Maintain and/or enhance riparian areas (via *Utah Riparian Management Policy*, 2005) through project design features and/or stipulations that protect riparian resources.
23. Consult with water right holders when rights-of-way (ROW) are renewed or amended to determine if water necessary to prevent riparian and aquatic degradation could be left in-stream through design or operation stipulations.
24. Analyze new or amended ROW's for water diversions to determine the amount of water that is available to enhance Monument objects that must be retained to prevent riparian and aquatic degradation. Incorporate design and operation stipulations as necessary to protect riparian and aquatic resources.
25. Monitor riparian conditions as needed for any surface disturbing activity that could affect riparian areas.
26. Fence above-ground distinct cultural sites; monitor areas of high potential to minimize impacts to surface or subsurface sites.

Enhanced Grazing Plan Summary

Overall, livestock grazing on federal and state lands in the county shall continue at levels consistent with the custom and culture, and proper stewardship of the resource. The continued viability of livestock operations within the county shall be achieved by management of land and forage resources, by proper optimization of AUMs for livestock (in forage resources), in accordance with supportable science and the multiple-use provisions of federal and state law.

Federal land management agencies will not adjust AUMs on public lands, without demonstrated scientifically based justification and full consultation between the permittee and the administering agency. Federal management agencies will not permit the relinquishment, transfer, or retirement of livestock grazing AUMs in favor of conservation, wildlife, or other uses besides livestock grazing.

Federal and state land managers will promote public respect for private structures, corrals, fences, water development, etc., on federal land in an effort to reduce vandalism, educate land users, and promote multiple-use concepts.

AUMs should not be placed in a suspended use category without a demonstrated rationale and scientific determination that the condition of the rangeland allotment or district in question will not sustain the AUMs proposed. Any grazing AUMs that are placed in a suspended use category must be returned to active use when range conditions improve. State-of-the-art monitoring data should be the basis for grazing management decisions on grazing allotments.

In an effort to gather more information on the needs of local ranchers using the Grand Staircase, the Kane County Resource Steering Committee sent out surveys focusing on the needs and economics of livestock grazing. Below is a list of concerns/suggestions local ranchers identified (*also see Appendix F-Revenue Models & Appendix G-Implan Models for specific percentages*):

- Kane County's policy is to oppose reductions in local AUM's, and oppose shortening seasons of use; ranchers should be allowed to improve their allotments;
- Allow re-seeding;
- Routine maintenance needs to be allowed in a timely manner to protect the allotments and grazing uses;
- Kane County will support the full use of active AUMs on all allotments; and
- Kane County will work to eliminate mismanagement, which causes loss of AUMs (i.e. no reseeded or maintenance to water facilities, access roads or fencing).

Mismanagement causes harmful effects to the environment, which adversely affects grazing when maintenance is not allowed in a timely matter. Improvements to allotments need to happen, or be allowed, as found in § 6220 of the BLM standards.

Range mismanagement caused by failure to use best science and modern technologies is an unacceptable practice in Kane County. Restricting the use of current science and proven methods is damaging to range health and proper livestock usage.

Kane County requires current and future science, and proven methods, to be used to enhance the rangelands in the county. The use of current science and methods should be given priority in range development and livestock management and are considered *Best Practices*. The following is a list of current science and proven methods for developing and maintaining range land health, which are acceptable to Kane County as *Best Practices*. The GSENM Management Plan must be revised to reflect the following requirements:

1. Aerial application of spike or herbicides.

2. Chemical applications for brush control. (Example: When blade mowing for rabbit brush.)
3. Chaining for new re-seeds or improvements of existing re-seeds.
4. Bull hog treatments for control of pinyon or juniper encroachments.
5. Cutting of cedar posts or jiggers for the improvement or maintenance of infrastructures on allotments.
6. Gathering of firewood or cutting for fuel.
7. Use of mechanical equipment for the control of erosion or (maintenance) of administrative roads.
8. Extend water lines for better distribution of livestock. (Example: Riparian areas fenced where possible, and water head boxes constructed for moving of water away from existing area.)
9. Flexibility in grazing dates on allotments.

Additional *Best Practices* that Kane County would like to see on the Monument, which are used in other BLM managed lands, include:

1. Renewal of existing seedings and development of newly seeded areas.
2. Flexibility with regards to the turning in and removal of cattle on allotments. (Manage for conditions rather than dates.)
3. Don't let threats of lawsuits from private interest groups stop staff from asking or pursuing new development or improvements.
4. Expand and allow new water developments, such as wells, extensions of water lines and catchments.
5. Use applied science in the development of new and existing improvements.
6. Ability to use aerial application for the control of brush in seedings. (This is the least invasive way)
7. Use of fire in controlled burns for brush, pinyon and juniper control. This is used extensively in other government agencies.
8. Support local economies by expanding local production of agricultural products.
9. Opening up the 16 (currently) closed allotments. These need to have infrastructure maintained by the BLM. Fences and water developments need to be up, running, and ready for use when drought and wildfire destroy present allotments.
10. Permittees be allowed to use tractors and four-wheelers in dry washes to maintain and repair fences, waterlines and other infrastructures.

Kane County asserts and adopts as its policy that these *Best Practices* increase bio-diversity on the Monument and are good for all species of life, including humans.

Ranchers attended scoping meetings and received handouts informing them of the BLM's intentions to create a new grazing management plan on the Monument. A few of the excerpts are listed below for information. In considering changes to the current grazing management practices on the GSENM, Kane County agrees with the BLM in recognizing grandfathered uses such as grazing and mineral uses, even if those uses may impair the wilderness study areas' (WSA) suitability for wilderness. These pre-existing uses are allowed to continue but are

restricted to the same manner and degree that was occurring on October 21, 1976, the date that FLPMA was enacted.

Livestock Grazing along Suitable Wild and Scenic Rivers: Livestock currently graze along many of the suitable segments and should be managed to protect identified river values. Existing structures may be maintained and any new facilities to facilitate livestock management should be unobtrusive so as to maintain the values for which the segment was found suitable. [BLM handout/scoping meeting]

Livestock Grazing in GCNRA: When the Glen Canyon area was designated as a national recreation area in 1972, the enabling legislation authorized livestock grazing. [BLM Handout]

GSENM's Objects: Ranching and livestock management remain at the core of the traditional uses of this region's public lands, and have created a cultural landscape rich in tangible objects such as trails, inscriptions, ghost towns, rock houses, and cowboy line-camps and intangible forces, which have shaped essential values of hard work, self-reliance, strong ties to the land, and strong ties to family. [BLM handout]

The BLM livestock Grazing Plan Amendment EIS strives to find a decision that will enable sustained use of the land through improved land health and science-based grazing management. [BLM Handout]

Planning Criteria and Planning Issues National Conservation Lands: The BLM and the National Park Service will coordinate and communicate with State, local, and tribal governments to ensure that the BLM and the NPS consider provisions of pertinent plans, seek to resolve inconsistencies between State, local, and Tribal plans, and provide ample opportunities for State, local, and Tribal governments to comment on the development of amendments. [BLM Handout]

Public Meetings: The Governor's Public Lands Policy Coordinating Office (PLPCO) held a meeting with Kane County ranchers in June, 2016 to hear their issues pertaining to leases they held on public lands. (This was one of many meetings held with ranchers throughout the state of Utah.) Their intent was to act as liaison between the federal agencies – BLM, Forest Service, and National Park Service – to mitigate problems the ranchers felt were aggravating their ability to keep in compliance with maintaining rangeland health on their allotments.

The first meeting identified the top concerns; the second meeting met one-on-one with the agencies to obtain solutions. One of the top concerns from ranchers was that federal agencies would not allow them to take machinery (motorized vehicles) into their allotments to repair water troughs, fences or washed out roads. Yet, the federal agencies would take large, construction (diesel operated) machinery to repair their own. The ranchers also voiced their desire for reactivating suspended AUMs.

Another point was that the ranchers were the best land stewards out there; they needed the land to be productive and healthy. They had a real desire to take care of their allotments so their futures were ensured. The BLM had one Range Conservationist for over a million acres who

could not possibly give the land the attention it needed, yet they were the ones who made all the decisions for the rancher's allotments. Ranchers were concerned about the Range Cons who were making decisions who had never been out in the field or they rotated out of their position on a regular basis so they were always dealing with someone different.

One of the most important things that came out of the meeting was how essential it was to have documentation of the health and care of each allotment. Photographic evidence was the most dramatic documentation a rancher could provide to show improvements and rangeland health when a federal agency accused them of non-compliance. A rancher can take photos of a designated spot on his allotment every season, making sure there is an identifying marker to show the progression. It can be done easily with a cell phone camera. Each lessee should also obtain a copy of their file from the federal agency containing everything they have ever signed or sent. This will help with the many employee turnovers.

Wilderness Study Areas or Wilderness Designation

Kane County is adamantly against any further Wilderness designation on the Monument (or elsewhere in Kane County) because it would decimate the local economy. A study done by Ryan Yonk, Ph.D., (et.al.) showed that 'Wilderness' designation is associated with lower per capita income.²⁴ Yonk found that, "the argument often stated by the environmental community that Wilderness is good for a local economy is simply not supported by our data."²⁵ "We find no evidence that Wilderness land designations represent an economic boon to local economies. Rather, the evidence suggests that Wilderness designations accompany worse economic outcomes."²⁶ "...benefits and cost of Wilderness...are not evenly distributed since local communities bear a disproportionate share of the costs of Wilderness designations."²⁷

Kane County believes current BLM policies on Wilderness and Wilderness Study Areas are in direct violation of Utah's Wilderness Act of 1984²⁸ (Act). This Act set the parameters for non-wilderness areas and stated the land "...shall be managed for multiple use in accordance with land management plans..." and "...such areas need not be managed for the purpose of protecting their suitability for wilderness designation prior to or during revision of the initial land management plan."²⁹ It is also in violation of the Wilderness Act of 1964³⁰ where "the grazing of livestock...established prior to the effective date of this Act, shall be permitted to continue subject to such reasonable regulations..." and the Taylor Grazing Act, where "...grazing privileges recognized and acknowledged shall be adequately safeguarded".

There are currently 16 Wilderness Study Areas (WSAs) on the Monument which total approximately 877,000 acres (almost half of the BLM administered land within the Grand

²⁴ R.M.Yonk, Ph.D., Southern Utah University, Brian C. Steed, Ph.D., Utah State University, Randy T. Simmons, Ph. D. Dept. Of Economics & Finance, R. Christopher Martin, Dept. of Economics & Finance; "Boon or Bust: Wilderness Designation and Local Economics", 2013.

²⁵ Ibid. pg.21

²⁶ Ibid. pg.23

²⁷ Ibid. pg.22

²⁸ Utah Wilderness Act, Public Law 98-428, 98th Congress, September 28, 1984;

²⁹ Ibid. Title II-Release of Lands for Nonwilderness Uses, Sec. 201. (b)(3)

³⁰ The Wilderness Act, Public Law 88-577 (16 U.S.C. 1131-1136) 88th Congress, Second Sessions, September 3, 1964.

Staircase). Six of these WSAs are in Kane County (approx.490,000 acres)³¹ and four of them straddle the Kane and Garfield County lines (approx. 184,000 acres).³² The other six are in Garfield County. According to BLM Manual 6330, livestock grazing (as well as mining and mineral leasing) is a grandfathered use within the WSA's and is allowed to continue in the same manner and degree as it occurred prior to Monument designation, even if the activity impairs wilderness suitability.³³ Further, it is clear the BLM recognizes there are "pre-existing uses" such as livestock grazing, mining and mineral leasing and these were allowed prior to the enactment of the Federal Land Management Policy Act on October 21, 1976.

In the BLM's Manual 6330 it clearly states, other uses such as *recreational activities* [emphasis added] are not included in their grandfathered uses clause.³⁴ Therefore, the question of conflict between users should never arise. By the BLM's own admission through its policy manual, it cannot use "outstanding opportunities for solitude" or "primitive recreation, or unique and supplemental values including cultural resources or status of indigenous species that are listed or candidates for listing, as threatened..." for indicators that negatively impact a WSA should a cow appear on the horizon when sharing a stream next to a hiker.

Kane County does not believe there is a difference between a 'grandfathered use of livestock grazing within a Wilderness Study Area' and any other land mass on the Monument. A pre-existing use is a pre-existing use. Kane County has already asserted that Proclamation 6920 grandfathered livestock grazing on the Monument by stating, "Nothing in this proclamation shall be deemed to affect existing permits or leases for, or levels of, livestock grazing on Federal lands within the monument; existing grazing uses shall continue to be governed by applicable laws and regulations other than this proclamation." And that "The establishment of this monument is subject to valid existing rights." The remaining acreage on the Monument, outside the land designated as WSA's, needs to remain open for its originally intended use, which, according to Utah's history, is open range ranching and grazing.

There are 90 allotments that are wholly or partially within the Monument for a total of 1,855,600 acres. Within these allotments there are 76,957 active AUMs and Kane County is striving to activate the 29,000+ AUMs that are currently in suspended status throughout the County. (The actual number of 'cows on the ground' is closer to 40,000; the larger number [76,957] represents active permits on the books.)

Kane County's Resource Management Plan (KCRMP) documents that range livestock production is an integral part of the county's history, custom, culture, and economy. Grazing allotments included on the Monument make up a substantial part of the range resources available to ranchers. Reduction or elimination of grazing on the Monument would cripple the livestock industry and have severe consequences for the people and economy of the county. Therefore, it is the position of Kane County, as documented in the KCRMP that livestock

³¹ Bureau of Land Management Wilderness Study Areas, <http://www.blm.gov/ut/st/en/fo/grand_staircase-escalante/national_landscape/wilderness_study_areas.html> downloaded 4/27/16

³² Ibid. w/maps: www.blm.gov/style/medialib/blm/ut/grand_staircase-escalante/programs/wilderness_wsa.Par.25283.File.dat?GSENM_wsa.pdf Downloaded 4/27/16

³³ Bureau of Land Management Manual 6330, Management of Wilderness Study Areas, 1.6 Policy; C. Non-Impairment Standard; 2(e) Grandfathered Uses.

³⁴ Ibid.

grazing continue on the Monument at levels consistent with the sustainability of the resource and the ranching industry. That includes increasing the levels of AUMs per allotment as the forage/utilization formulas support the increase.

Utah Code, 63J-4-401(6)(m)(ii)(iv) and (v) says, “the state opposes the relinquishment or retirement of grazing animal unit months [AUMs] in favor of conservation, wildlife and other uses;” “the state opposes the transfer of grazing animal unit months to wildlife for supposed reasons of rangeland health,” and “reductions in domestic livestock animal unit months must be temporary and scientifically based on rangeland conditions;” (respectively).

Further, Utah Code, 63J-4-401(6)(a)(i) and (ii), asserts “the citizens of the state are best served by applying multiple-use and sustained-yield principles in public land use planning and management;” and “multiple-use and sustained-yield management means that federal agencies should develop and implement management plans and make other resource-use decisions that:

- (A) achieve and maintain in perpetuity a high-level annual or regular periodic output of mineral and various renewable resources from public lands;
- (B) support valid existing transportation, mineral, and grazing privileges at the highest reasonably sustainable levels;(emphasis added)
- (C) support the specific plans, programs, processes, and policies of state agencies and local governments; (emphasis added)
- (D) are designed to produce and provide the desired vegetation for the watersheds, timber, food, fiber, livestock forage, and wildlife forage, and minerals that are necessary to meet present needs and future economic growth and community expansion without permanent impairment of the productivity of the land;”(emphasis added).

Adaptive Management Report³⁵

The GSENM Management Plan (1999)³⁶ establishes that one of the basic precepts of the Monument includes the “unparalleled opportunity” to research “increasing our understanding of the interactions between humans and their environment; improving land management practices; and achieving a properly functioning, healthy and biologically diverse landscape.” This management plan also describes the adaptive management approach to be used in managing the Monument. The approach involves a four-step process of planning, implementation, monitoring and evaluation. These are sound concepts and provide a good basis for achieving the objectives for which the Grand Staircase-Escalante National Monument was established while continuing the historic uses of the Monument protected by the Proclamation. Unfortunately, the management plan had to list the numerous blanket restrictions (WSAs) on land use and management practices that may or may not provide a basis for achieving management objectives in the most environmentally effective and economic way. Restrictions of use of machinery, aerial application of herbicides, cutting of fence posts, seeding of non-native

³⁵ Grazing Management Guidelines contributed by Lamar Smith, Ph.D., Associate Professor Emeritus, University of Arizona, 2014, Certified Professional in Rangeland Management.

³⁶ Grand Staircase-Escalante National Monument Management Plan, prepared by the U.S. Department of the Interior, Bureau of Land Management, signed November 1999 but became effective February 2000.

species, vehicle access to range improvements, etc. should be considered on a case by case basis rather than imposed as general rules.

Land management based on the concepts from the 1999 Management Plan should allow land managers to consider which combination of practices could be applied to achieve specific objectives on a particular piece of land. This approach would allow the costs and benefits (both ecological and economic) of various practices to be considered for specific situations, and would encourage experimentation and innovation. This is the basis for the adaptive management approach to vegetation and resource management.

Trend Monitoring

Monitoring of range trends (changes in soil and vegetation) is essential in the adaptive management process. Changes in plant species (frequency, density, composition, production, etc) or soil surface conditions (litter, bare ground, gravel cover, etc) can provide an indication of how the range is responding to management and/or weather conditions. Monitoring methods must provide data that is repeatable and objective in order to establish valid sampling. Monitoring is usually done on key areas or designated monitoring areas, which are indicative of trends over a larger area. This helps eliminate observer bias or sampling errors.

On the Monument, BLM has used two different techniques for monitoring. The first is the use of trend plots, which are 3x3 or 5x5 foot frames placed in selected locations and marked with angle iron so they can be relocated. Cover (percent of ground covered) and density (number of plants per unit area) was determined in these plots. In some cases, a line intercept transect was also run starting from the square plot. Close-up and general view photographs were also made. These plots were generally established in the 1960s and have been re-measured and/or re-photographed several times since then. Some of them have been re-photographed fairly recently.

Trend plots furnish quantitative data on species cover and density in the plots. However, the size of the plots is inadequate to provide a good representation of changes in plant community at the location. To get a reliable estimate of changes in the plant community would require a number of these plots at each location. Therefore, the data from the plots is not very useful.

Photographs provide a better basis for analyzing trends than plot data. Close-up photos may provide some information about soil surface conditions, at least in the plot. General view photos show the general aspect of the vegetation in the vicinity of the plot. While these photos do not provide quantitative data on species composition or cover, they may furnish a basis for evaluating changes in the plant community such as increase in shrub cover. They can also help determine when major changes in the plant community occurred.

Photos provide a qualitative historical record of vegetation at selected locations on all or most of the allotments on the Monument. They should be re-photographed periodically and any changes that can be noted documented. Changes should be interpreted considering the ecological site on which the plots are located. *Quantitative recording of vegetation information in the 3x3 foot or 5x5 foot plots should be discontinued.*

BLM has recently (in the last 10-15 years) changed its trend monitoring procedures to use frequency and point estimates of ground cover. This method provides quantitative data that can be used to determine changes over time. Frequency is the percentage of a sample of quadrats of a certain size in which a plant species occurs. The frequency of a plant species is related both to the number and distribution of plants of that species. Frequency is related to the size of quadrat used, thus the same quadrat size must be used in repeated sampling. Usually 100-200 quadrats are used at each sample location. Ground cover is measured by recording "hits" on plant bases, litter, rock and/or gravel, and, in some cases, biological crusts. Usually 400-500 points are recorded at each location. The frequency transects may be located at the same place as the trend plots or in new locations as required.

Frequency does not provide information on species composition on a weight or cover basis, or about plant production. If such information is required, additional measurements must be used. The value of frequency is that it requires little training, provides repeatable data, and requires less field time compared to methods that require more training and expertise.

The use of frequency and ground cover (along with photographs) should be continued to monitor key areas on grazing allotments at intervals of 3-5 years. Permittees and other interested parties should be invited to participate in gathering and interpreting these data. Frequency (or other monitoring data) can only be used to establish whether a change has occurred or not; it cannot establish the cause of observed changes. Identifying the probable cause of observed changes (or lack of change) is an integral part of the evaluation portion of the adaptive management process. Without this it is not possible to make informed decisions about what changes in management, if any, are indicated.

Assessment of Rangeland Health and Proper Functioning Condition

The 1996 Range Reform regulations adopted by BLM required that all grazing allotments be evaluated according to "*Standards and Guidelines for Rangeland Health*" (S&Gs). *Standards* are attributes of the rangeland; *Guidelines* are management practices to be applied. The BLM of Utah developed S&Gs for the State with cooperation from the Utah Resource Advisory Council (RAC).

There are four Utah Standards which can be summarized as follows:

- Standard 1 – Upland soil productivity and protection is maintained by adequate vegetation and surface cover.
- Standard 2 – Riparian areas (if any) are in proper functioning condition (PFC).
- Standard 3 – Desirable composition and structure of vegetation for the site are present.
- Standard 4 – Utah standards of water quality are met.

Regulations require that each of the standards be evaluated, with due consideration of ecological site potential, to establish whether standards are being met, or if significant progress toward meeting the standard is being achieved. If the standard is not met, or if significant progress is not being made toward meeting it, then the cause must be determined. If the cause is determined

to be current livestock grazing management, then a change in grazing must be made to correct the problem, (i.e. improved distribution, change in season of use, change in stocking rate, etc.).

Assessment of these standards is not monitoring; it does not involve measuring change over time and it is not intended to be used for monitoring. It is a one-point-in-time qualitative conclusion based on professional judgment and site-specific reference materials. The assessment of both upland rangeland health and riparian PFC should only be done by locally experienced professionals, preferably by an interdisciplinary team, and it should be based on documented reference materials specific to the ecological sites or riparian types under consideration.

Assessing whether the standard is met is the first step. Determining whether there is progress toward meeting the standard cannot be necessarily identified at one point in time. This determination should be based on an examination of trend data as described above. If such data are lacking or inconclusive, then monitoring should be initiated or continued to establish the trend. Identifying the cause for failure to meet the standard or to make progress toward meeting it also involves judgment and consideration of other data or evidence. Examples would be analysis of precipitation data, comparison with similar situations in other areas, and local knowledge of the area.

Standards 1 and 3 are generally evaluated on uplands with the aid of a check sheet and reference sheets specific to each ecological site. This process is described in the Rangeland Health Technical Reference 1734-6 and BLM Manual 4180 and Handbook 4180-1. Standard 2 is evaluated in a similar fashion with PFC check sheets and instructions for either lotic (flowing water) or lentic (ponds or springs) situations as described in Interagency Technical References 1737-15 and 1737-16.

Standard 4 is different in several respects from the other three. First, it is use-based, where the other three standards relate to ecosystem function irrespective of uses. The State of Utah establishes water quality standards for designated uses (drinking water, full body contact, cold water fisheries, livestock water, etc). These do not have any necessary relation to the health of the upland watershed or the hydrology of the riparian system. Second, the chemical, biological, or sediment content of the water may be related to the natural sources of the water, rather than to land uses. For example, the kind of rock or soil through which the water passes may affect the presence of dissolved minerals or suspended sediments in the water. Without some baseline information on specific streams achievable, water quality cannot be determined. Third, water quality may vary significantly in time and space. For example, the concentration of minerals, biological organisms and sediment may vary by season, within years or among years due to volume of flow.

The water quality standard was included because the federal regulations require it. Determining whether this standard is being met involves very different methods and time frames, and it is dependent on the existence of adequate baseline standards that may or may not exist specific to the water body being considered.

Finally, the assessment of range health is usually done at selected locations on an allotment. These may be representative areas or critical areas identified by the assessment team. Rarely, if ever, does it involve assessment of every acre of any allotment. Therefore, if some areas on an allotment are found to not meet standards, it should not be reported that the entire allotment does not meet standards. After all, every allotment or other area of land may have areas that do not meet standards of rangeland health, e.g. roads, campgrounds, parking lots, corrals, etc. Therefore reporting on the progress of range health evaluation should be done on the basis of the number of allotments assessed and corrective action taken, not on the number of allotments (or acres) that did or did not meet standards.

Utilization

Utilization is the percentage of the current year's production of forage plants that has been removed by grazing. It is a useful tool in range management. Proper use is a term used to indicate a level of grazing that is compatible with the sustained productivity of key forage plants or the range as a whole. Research done by clipping and grazing studies has shown that average utilization of about 35-50% will allow adequate growth and reproduction of most range grasses, although these are only guidelines which depend on other factors such as the frequency of grazing, the season of grazing and other factors.

Utilization, as defined above, cannot be measured unless the full year's production is known. It can only be measured after the end of the growing season, which is usually in the fall. Measuring use during the growing season is not utilization since the current growth is not complete. Use-measurement during the growing season should be called seasonal use to distinguish it from true utilization. Utilization guidelines for proper use cannot be applied to seasonal utilization.

Utilization can be used for several purposes in range management. Mapping the amount of utilization on an allotment (use pattern mapping) is very useful in identifying where grazing distribution needs to be improved by fencing, water development, or changes in season of use. Measuring utilization at trend monitoring locations can help to identify when grazing is responsible for observed trends in vegetation cover or composition. Monitoring utilization in key areas can help establish whether reductions in stocking are needed or increases in stocking may be feasible. In making these interpretations, it is important to recognize that measurements of utilization include not only the degree of use by livestock but also by wildlife, insects, and losses due to weather. In some cases, these other sources of use may be a substantial part of the total utilization.

Utilization guidelines are often misused by setting standards that are too strict. Such utilization guidelines should not be used as a trigger to move livestock when grazing is done during the growing season, because the guidelines do not refer to seasonal utilization. Utilization guidelines from grazing studies are developed based on average utilization over a period of years; not a target to be met every year.

Stubble height is another way of approaching the intensity of grazing use. Stubble height is the average height of forage plants remaining after grazing. Unlike utilization, it can be measured at

any time of the year. However, guidelines on stubble height should also recognize that it will vary from year to year. Stubble height guidelines are sometimes used as indicators of cover for certain wildlife species (e.g. nesting birds) or for sediment trapping in riparian systems. If that is the purpose, stubble height measurements should not be confined to forage plants preferred by livestock.

When recommendations for the use of *utilization* are incorporated into range management plans the following guidelines should be followed:

1. Utilization is not a management objective; it is a tool for helping guide management to achieve vegetation/soil objectives.
2. Recommendations of proper use should only be based on utilization observed after the growing season – it cannot be applied to seasonal utilization.
3. Utilization, or seasonal utilization, guidelines should not be used as rigid triggers for the movement or removal of livestock.
4. Recommendations for measuring utilization or stubble height should always specify how it is to be measured or observed, the species to be measured, the location to be measured, and the time of year it is to be measured. If that is not done, the data can be easily misused or misinterpreted.

Flexibility in Grazing Management Plans

A part of the grazing management plan should describe how pastures in the allotment will be used. In some cases, a grazing system is recommended, such as a deferred rotation or best pasture system. To be effective and workable grazing management plans must incorporate flexibility to adapt to weather and other conditions as they occur, rather than rigid requirements of number and movement dates.

Grazing management plans in semiarid rangelands like those of the Grand Staircase-Escalante National Monument must consider and accommodate a large number of factors. Among them are:

1. Kinds and growth patterns of forage plants in different pastures and their needs for growth and reproduction which may dictate season of use and/or need for periodic deferment of grazing.
2. Nutritional and other needs of different classes of stock (dry cows, lactating cows, yearlings, etc).
3. Availability and reliability of water sources in each pasture.
4. Livestock management needs such as breeding, weaning, replacement heifers, shipping, etc.
5. Topographic factors and natural movement routes of livestock; in rough (and primitive) country it is not always feasible to alter movement patterns between certain pastures.
6. Considerations imposed by other land uses or values such as recreation, hunting, wildlife needs, endangered species, etc.

Based on the factors listed above, a general plan can be developed that provides guidelines for deciding when and where livestock will be grazed during a series of years. However, to be successful, this can only be a general plan. The weather (amount and timing of precipitation, and the temperature patterns in spring and fall) can have dramatic effects on the amount and kind of forage available in each pasture from year to year. It also has an effect on the availability and distribution of water. Precipitation can vary markedly within an allotment in any given year. Therefore, it is imperative that grazing management plans provide the flexibility to alter plans as the grazing year progresses to account for the weather (and other unpredictable events such as wildfire, floods, etc).

The grazing management plan should provide guidelines, but the permittee must have the flexibility to stay in some pastures longer or to move quicker than planned to accommodate the weather and other factors. To make this work, the permittee should keep good records of numbers and dates when each pasture was stocked, and notes on conditions when the pasture was grazed. Before the next grazing year, the permittee and range specialist should agree on a plan for the coming year based on those records and any other monitoring data collected. For example, if a pasture is grazed heavier or earlier than planned in one year, it could be grazed lighter or deferred the next. The grazing management plan should therefore be a framework laying out guidelines for making grazing management decisions, not for setting an inflexible schedule.

Range Improvements and Vegetation Management

Range improvements include: fences, water developments, trails, roads, cattle guards, corrals and other facilities designed to allow good grazing management. These improvements allow control of the timing, intensity and distribution of grazing by livestock, and give the ability to keep livestock where they are supposed to be. Good improvements are essential to effective grazing management, which not only improves livestock performance but allows grazing to be done in ways that minimize conflicts with other land uses and values. Permittees and the BLM usually share the costs of new improvements and permittees generally perform most of the maintenance of improvements.

Restrictions that make the construction or maintenance of existing and new improvements more expensive (for the BLM and permittees) can cause delays, and therefore, resource management objectives may not be realized. Guidelines for construction or maintenance must include avoiding unnecessary resource damages, but still be realistic. It should balance the (possible) short term damages with the long term benefits that will occur as a result of the improvements.

Some areas of the Monument have experienced vegetation changes over the years, especially with the invasion of sagebrush and juniper into areas that formerly supported more grasses and other herbaceous plants. These invasions have often caused near-closed canopy situations that support very little herbaceous understory. This condition creates less livestock forage and reduced wildlife habitat value, along with increased soil erosion. Whatever the causes of such changes, it is apparent that livestock grazing management alone, or complete elimination of livestock grazing, will not cause the process to be reversed or prevent it from becoming worse. If the goals for landscape diversity and health stated in the Monument Management Plan are to

be achieved, some vegetation treatments and seeding(s) will be required. Such vegetation treatments will directly benefit forage for livestock and help make sustainable ranching possible, but more importantly they will benefit wildlife, soil stability, diversity of plant communities and life forms on a landscape level (and ultimately, the visual quality of the landscape). Blanket and arbitrary rules limit the effective and economical application of these treatments.

Brush treatments and reseeding should be implemented on selected sites where the potential for success is favorable. The most effective and economical treatments, such as controlled burning, should be used on a case by case basis. This includes the use of non-native species for reseeding when they offer the best chance of success. The long term benefits outweigh the (possible) short term damages. It must be recognized that in most cases these treatments will have to be maintained at intervals to prevent re-invasion of shrubs to undesirable levels.

Closed Allotments and Grassbanks

Grazing allotments on the Monument should not be closed or converted to grassbanks when they are voluntarily released by permittees for whatever reason. Any allotment that becomes vacant should be offered to other permittees unless there are compelling and documented reasons for leaving the allotment vacant. Whoever obtains a grazing permit should be required to run a reasonable number of livestock on it, unless there are reasonable and documented resource concerns or personal issues that require a temporary reduction. Livestock grazing is an important use of BLM land, including the Monument, established by law (Proclamation) and policy. A decision to reduce or eliminate livestock grazing on an allotment should only be made when resource conditions or un-resolvable conflicts with other uses dictate.

Because decisions to convert active grazing allotments to non-use or grassbanks have impacts beyond the BLM and the permittee, they should be made only when other affected interests, including county government, are involved.

Grassbanks are vacant allotments or pastures available to existing permittees when additional forage is needed because drought, wildfire and other events have caused a temporary shortage. On the surface this seems like a good idea. But in practice it seldom works and it is really just another way to reduce overall stocking rates. Experience has shown that, when needed, grassbanks are usually not usable because of their location, making it impractical to move livestock to them. In addition, fences, water developments, corrals and other facilities become unusable due to lack of maintenance. Each allotment needs a responsible person (permittee) who has the incentive to keep up improvements for proper management.

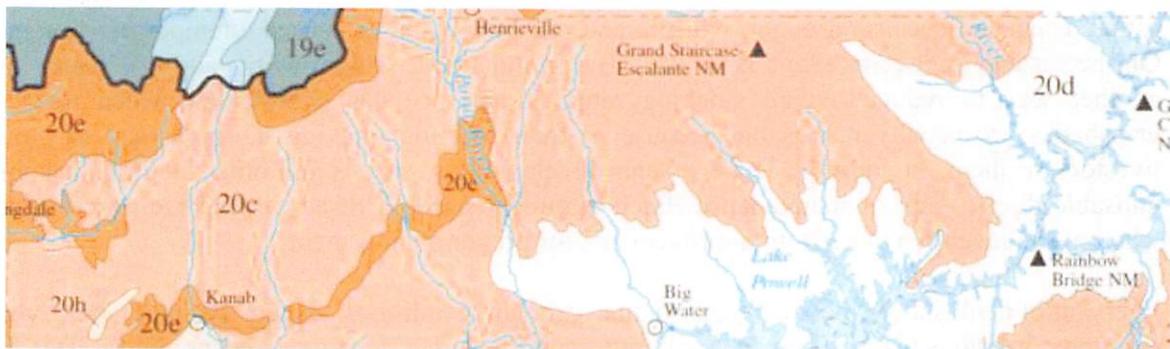
Every allotment should be managed so that drought conditions, except perhaps some very extreme conditions, can be managed without undue resource damage or economic disaster for the permittee. In the case of extreme and prolonged drought, it is likely that all allotments will be equally affected therefore a few grassbanks will not make much difference. In the case where only a few pastures or allotments are involved (as in a fire) it should be possible to locate some additional short term grazing that could be made available by mutual agreement with other permittees. *End of Report.*

Updated Soils/Landscape Report Inserted Here Vegetation and Soils³⁷

Kane County lies along the central southern border of Utah. It is the 8th largest of Utah's 29 counties encompassing 3,990 square miles. Much of the county lies at elevations between 5,000 and 7,500 feet above sea level, but in the northwest part of the county land on the Markagunt and Paunsaugunt Plateaus lies at elevations between 7,500 and 9,400 feet, and the eastern and southeastern portions of the county along Lake Powell lie between 3,500 and 5,000 feet in elevation.

Precipitation patterns mirror the elevation with more than 40 inches of precipitation falling annually on the high elevations of the Markagunt Plateau and over 25 inches on the balance of the Markagunt Plateau and on the Paunsaugunt Plateau; precipitation tails off to between 16-25 inches as these plateaus drop into foothills and valleys. In much of the area south and east of these plateaus there are broad bands of landscapes with 12-16 inches and 10-12 inches of annual precipitation trailing off to narrower landscape bands of 8-10 inches and 5-8 inches toward to the east and southeast along Lake Powell with the lowest precipitation (6 inches) in pockets of land near Lake Powell, e.g., Bullfrog and Warm Creek Basins.

A useful way to examine landscapes is to view them in *ecoregions*. Ecoregions denote areas of general similarity in the type, quality, and quantity of environmental resources. They are designed to serve as spatial frameworks for the assessment, management, and monitoring of ecosystems and ecosystem components. In that light this summary presents the ecoregions and soils of Kane County. Ecoregions have been prepared and presented in hierarchical levels; the coarsest level is Level 1; the finest level is Level IV. Ecoregions are identified through the analysis of spatial patterns and composition of biotic and abiotic phenomena such as geology, physiography, vegetation, climate, soils, land use, wildlife and hydrology. At Level IV Ecoregions, Kane County has 7 ecoregions: three in Utah's Wasatch and Uinta Mountains Ecoregion—Ecoregion 19 (which also includes the Markagunt and Paunsaugunt Plateaus) and four in the Colorado Plateaus Ecoregion—Ecoregion 20 (see map).



Level IV Ecoregions of Kane County

³⁷ E. Durant MacArthur, Ph.D., "Summary of Kane County, Utah Vegetation and Soils" Emeritus Scientist, Rocky Mountain Research Station, USDA Forest Service, Feb. 18, 2014.

In Kane County, Ecoregion 19 consists of dissected plateaus and intervening valleys—the High Plateaus (19e), Semiarid Foothills (19f), and Mountain Valleys (19g) of (*see map*) and occupy 8 percent of the county’s land base (Table 1).

The High Plateaus Ecoregion is characterized by subalpine fir, Engelmann spruce, Douglas-fir, and aspen communities as well as some high elevation meadows. Land use includes logging, grazing, and recreation. The Semiarid Foothills Ecoregion has a matrix of sagebrush, grama grass, mountain mahogany, Gambel oak, pinyon and juniper. Grazing is common and some areas have been cleared of trees and reseeded to grasses.

The Mountain Valleys Ecoregion contains terraces, flood plains, alluvial fans, and hills. Sagebrush is common but irrigated cropland and pasturelands as well as managed rangeland have been established.

The four Colorado Plateaus ecoregions occupy over 90 percent of the Kane County land base. These are the Semiarid Benchlands and Canyonlands (20c), Arid Canyonlands (20d), the Escarpments (20e), and the Sand Deserts (20h) Ecoregions of (*see map*).

The Semiarid Benchlands and Canyonlands Ecoregion of Kane County occupy over 50 percent of the county’s land area. Broad grass, shrub, and woodland covered benches and mesas characterize these areas. Slickrock and fin bedrock exposures are common along rims, escarpments, and on steep slopes. Low escarpments separate remnant mesa tops and narrow canyons from surrounding benches. Fine sand soils support warm season grasses, winterfat, Mormon-tea, fourwing saltbush, and sagebrush. Pinyon and juniper occur on shallow, stony soils but are expanding due to fire suppression and erosion. The principal uses of these lands are grazing and recreation in addition to wildlife habitat. The Arid Canyonlands Ecoregion is located on the inner gorge of the Colorado River and its major tributaries.

Ecoregion	%
High Plateaus (19 e)	5
Semiarid Foothills (19 f)	2
Mountain Valleys (19 g)	1
Semiarid Benchlands and Canyonlands (20 c)	53
Arid Canyonlands (20 d)	25
Escarpments (20 e)	13
Sand Deserts (20 h)	< 1

This ecoregion occupies about 25 percent of the county. In general, this region is bound by nearly vertical canyon walls that separate it from the adjacent higher benchlands of the Semi-arid Benchlands and Canyonlands Ecoregion. Exposed bedrock is common. Blackbrush, shadscale, and the drought tolerant grasses galleta and Indian rice grass are common plants. As in the case of the Semi-arid Benchlands and Canyonlands Ecoregion the principal uses of the Arid Canyonlands Ecoregion are grazing, recreation, and wildlife habitat.

The Escarpments Ecoregion is characterized by deeply dissected, cliff-bench complexes that rise above the Semi-arid Benchlands and Canyonlands Ecoregion. Vegetation ranges from Douglas-fir forests on steep, north-facing slopes to desert and semi-desert grassland or shrubland on the lower drier sites. Pinyon/juniper woodland often dominates escarpments and

benches that have shallow soils. The principal land uses here are for wildlife habitat and recreation.

The Sand Deserts Ecoregion is composed of nearly level landscapes covered with a mantle of sandy aeolian deposits, sand dunes, and exposed sandstone bedrock. These lands support grazing and provide some irrigated fields for hay and grain production.

More detailed vegetation patterns are presented below which presents 46 land cover classes. These are finer scale, real time subdivisions of the ecoregions at the time the data was collected.

Soil type distribution follows, in general, other patterns presented for vegetation and precipitation with bands that flow from west (especially northwest) eastward across the county. The most common soil types are mollisols, entisols, aridisols, rock-outcrops, and rock outcrop-badland. Mollisols are characterized by thick, dark, relatively fertile surface soils which have been formed under grassland vegetation or in forested zones where grasses are an important component of the understory. Entisols are young soils without discernible horizons except some darkening of the surface. They occur on areas that have been impacted by water flow such as alluvial terraces and fans, valley bottoms and floodplains. Aridisols occur in areas of relatively low annual precipitation, less than 14 inches, sometimes much less. They occur on lower terraces and fan slopes and in desert valleys and are often characterized by long, dry summers.

End of Report.

Introduction to Microbiotic Crusts³⁸

Understanding the role of microbiotic crusts in total resource management is an ongoing challenge. Areas in the United States where crusts are a prominent feature of the landscape include the Great Basin, Colorado Plateau, Sonoran Desert, and the lower Columbia Basin. Crusts are also found in agricultural areas, native prairies, and sandy soils in Glacier Bay, Alaska.

Outside the United States, crusts have been studied in the Antarctic, Australia, China, and Israel, among other locations. In fact, microbiotic crusts have been found on all continents and in most habitats, leaving few areas crust free.

Microbiotic crusts are formed by living organisms and their by-products, creating a surface crust of soil particles bound together by organic materials. Above ground crust thickness can reach up to 10 cm. The general appearance of the crusts in terms of color, surface topography, and surficial coverage varies. Mature crusts of the Great Basin and Colorado Plateau are usually darker than the surrounding soil. This color is due in part to the density of the organisms and to the often dark color of the cyanobacteria, lichens, and mosses. The presence or absence of a crust is partly determined by soil texture and conductivity, pH, moisture, and possibly temperature. Crust coverage varies greatly, from less than 10 percent to nearly 100 percent.

³⁸ Roxanna Johnston, Botanist, Grazing Lands Technology Institute, U.S. Dept. of Agriculture, Natural Resources Conservation Service, Soil Quality Institute, July, 1997.

Crusts contribute to a number of functions in the environment. Because they are concentrated in the top 1-4 mm of soil, they primarily affect processes that occur at the land surface or soil-air interface. These include soil stability and erosion, atmospheric N-fixation, nutrient contributions to plants, soil plant-water relations, infiltration, seedling germination, and plant growth.

The land where crusts occur is used for a wide range of purposes—from grazing and recreation to military uses, and in some places, crops. Ultimately, land managers want to know how the functions of crusts change under different practices. Where the functions of crusts are impaired or eliminated because of land use practices, and are essential to the health of the ecosystem, land managers need guidelines to adapt their practices to protect or restore the functions of crusts. *End of Report.*

Kane County recognizes that Proclamation 6920 identified cryptobiotic (microbiotic) crusts as having “significant biological interest” but it did not identify it as an object that needed to be protected. It is an absurd notion to try to sequester a huge section of soil on the Monument when that soil is commonly found in semi-arid environments everywhere. According to the National Park Service, “Living soil crusts are found throughout the world, from the hottest deserts to polar regions.”³⁹ The U.S. Department of Agriculture and the Natural Resource Conservation Service says these crusts “have been found on all continents and in most habitats, leaving few areas crust free.” The alternative might be to issue hoof booties to all livestock and wildlife to minimize soil disturbance if it weren’t for the research that indicates some disturbance is good for the soil.

Proclamation 6920 refers to a “high number of endemic species” containing “an abundance of unique, isolated communities such as hanging gardens, tinajas, rock crevice, canyon bottom, and dunal pocket communities” for “many ancient plant species” and “large expanses of a variety of geologic strata” that provide the material for “unusual and diverse soils.” Kane County asserts that Proclamation 6920 laid the groundwork to study the historic, scientific, botanic, and cultural variety on the Monument, but it did not isolate every item it mentioned as an object to build a protective range management plan around. In fact, it said such diversity made the Monument an outstanding place for the purposes of study, yet nothing in the proclamation affected “existing permits or leases for, or levels of, livestock grazing on Federal lands within the monument; existing grazing uses shall continue...”

Cyanobacteria and Cyanolichens⁴⁰

In both field- and greenhouse-studies, cyanobacteria and cyanolichens of cold-temperate deserts often enhance an essential element uptake in associated herbs. That effect is often associated with better seedling establishment and larger seedlings. The following are possible mechanisms for these effects: (1) the microbiota concentrate essential elements in available forms in soil surface layers; (2) the microbial surface covers are usually darker colored than the soil itself and produce warmer soils during cool seasons when soil water is most available; (3) the gelatinous sheaths of several cyanobacterial genera common on alkaline deserts contain chelating

³⁹ <<http://www.nps.gov/jotr/learn/nature/cryptocrusts.htm>>

⁴⁰ Great Basin Naturalist 53(1): 59-72; “Cyanobacteria and Cyanolichens, Can they enhance availability of essential minerals for higher plants?” Kimball T. Harper and Rosemary L. Pendleton

compounds; and (4) conditions that favor persistent microbial growths on soil surfaces also favor maintenance of larger populations of microorganisms that form mycorrhizal and/or rhizosphere associations with seed plants. There is evidence that associated animals may be nutritionally benefited by the enhanced mineral content of forage plants growing in well-developed cyanobacteria crusts.

Microphytic and Non-microphytic Soil Seedbeds (Implications)⁴¹

Excerpt from technical article on the physical and chemical comparisons between microphytic and non-microphytic soil seedbeds

A voluminous amount of literature documents the importance of soil surface microflora in a plethora of ecological processes. (Our) research further documents that well-exposed microphytic surfaces occupied by lichens and mosses, through the capture of aeolian dust, create a significantly finer-textured soil seedbed compared to adjacent seedbeds not occupied by lichens and mosses. Given the relatively short time frame (Bedell Flat exclosures < 40 years; Dogskins exclosures < 20 years) to produce these differences in seedbed particle size distribution, microphytic crusts likely play an important role in cycling of aeolian dust on rangelands and concomitantly on nutrient levels and the physical nature of soil seedbeds.

Mosses and foliose lichens appear to be more susceptible to livestock trampling than crustose lichens and microscopic forms. Moderate mechanical disturbance may stimulate these crustose lichens and microscopic forms which are more important in N-fixation. *End of article.*

Kane County recognizes the presence of wildlife and livestock may assist in some of the microbiotic processes that occur over time. "When the integrity of the crust is broken through trampling or other means, the soil is more susceptible to wind and water erosion. This soil can be carried long distances, covering intact crusts. Crusts tolerate shallow burial by extending sheaths to the surface to begin photosynthesis again."⁴²

Fire Effects on Cryptobiotic Soil Crusts

(In the Grand Staircase–Escalante National Monument)⁴³

Excerpts from USGS 5th Biennial Conference on effects of fire on GSENM

The Crawford Bench fire occurred sometime in the early 1950s and burned approximately 200 ha. Preceding the fire, the area had a mixed composition of Utah juniper, pinyon pine, and Gambel oak (*Quercus gambelii*), which are still present in adjacent unburned areas. Livestock is grazed on the site during winter months. Recreational and other activities are limited due to restricted access and interspersed privately owned land.

The fire at Five Mile Mountain occurred in 1989, 10 years prior to our sampling, and it burned approximately 300 ha. The area is dominated by Utah juniper mixed with patches of big

⁴¹ Robert R. Blank, Fay L. Allen, and James A. Young; West 1990, *J. Range Manage.* 54:194–196 March 2001; Technical Note: Physical and chemical comparisons between microphytic and non-microphytic soil seedbeds. "Microphytic Crust and Disturbance – Ecological Implications of Livestock Herbivory in the West" pg. 125.

⁴² Roxanna Johnston, Botanist, Grazing Lands Technology Institute, U.S. Dept. of Agriculture, Natural Resources Conservation Service, Soil Quality Institute, July, 1997.

⁴³ Proceedings USGS 5th Biennial Conf, Paul Evangelista, Debra Guenther, Thomas J. Stohlgren, and S. Stewart.

sagebrush and cliffrose. Soils are from limestone parent materials and are described as sandy loam (*Chapman 1997*). Slopes within the burn area are generally $< 2^\circ$, with a maximum of 5° . Land use on Five Mile Mountain includes livestock grazing during winter months, firewood cutting, and minimal recreational use.

Approximately 150 ha burned on Buckskin Mountain in 1997. The pre-burn vegetation at the site is mostly Utah juniper, big sagebrush, and cliffrose. Three months after the fire, resource managers seeded the burn site with native annual and perennial seeds. Seeding was conducted using a rangeland drill and dribbler pulled by a bulldozer. Additionally, 100 cliffrose seedlings were planted in areas inaccessible to the drill. Land use on Buckskin Mountain includes winter livestock grazing, firewood cutting, and minimal recreational use.

There was a second fire at Buckskin Mountain in 1998, only a few miles east of the 1997 burn. This fire burned an area of about 300 ha, including 150 ha that had burned in 1996 (not included in this study). Sampling was conducted only in areas that burned in 1998, excluding the 1996 burn. The site description for the 1998 fire is similar to the 1997 Buckskin fire; however, this fire received no post-burn seeding treatments.

Methods: Field sampling (four to six pairs) of multi-scale vegetation plots were established randomly at each burn site and at nearby unburned sites, except for Crawford Bench, which was limited to two sets of paired plots because of restricted access. Paired plots consisted of one Modified-Whittaker sample plot within the disturbed area and one control sample plot outside the burn perimeter. Each plot consisted of ten 1 sq m subplots, two 10 sq m subplots, and a 100 sq m subplot nested within a 20 x 50 m plot (*Stohlgren et al. 1995*). In each of the 1 sq m subplots, we recorded percent cover of cryptobiotic crust by developmental stages and bare ground. Within each of the two 10 sq m subplots, the 100 sq m subplot, and the 1000 sq m plot, we recorded presence of cryptobiotic crusts by development.

Discussion: Our analyses suggest that percent cover of young and old crusts substantially decreases after fire, and the area of bare ground increases. Three years following a fire, bare ground decreases as the recovery of young crusts begins to accelerate, and by 10 years, the percent cover is equal to adjacent unburned areas. Fifty years after the Crawford Bench fire, young crust cover remains higher in the burn site than in the unburned control site. Due to the lack of data between the 10 and 50 year-old-burns, it is difficult to determine whether these levels are continuing to increase, beginning to decrease, or have stabilized.

Vegetation Response to Fire & Post-burn Seeding Treatments⁴⁴

We compared three naturally ignited burns with unburned sites in the Grand Staircase–Escalante National Monument. Each burn site was restored with native and nonnative seed mixes, restored with native seeds only, or regenerated naturally. In general, burned sites had significantly lower native species richness (1.8 vs. 2.9 species), native species cover (11% vs. 22.5%), and soil crust cover (4.1% vs. 15%) than unburned sites. Most burned plots seeded or not, had significantly higher average nonnative species richness and cover and lower average

⁴⁴ Western North American Naturalist 64(3), © 2004, pp. 293–305; Paul Evangelista, Thomas J. Stohlgren, Debra Guenther, and Sean Stewart.

native species richness and cover than unburned sites. Regression tree analyses suggest site variation was equally important to rehabilitation results as seeding treatments. Low native species richness and cover, high soil C, and low cover of biological soil crusts may facilitate increased nonnative species richness and cover.

Our study also found that unburned sites in the region had equally high cover of nonnative species compared with the rest of the Monument. Cheatgrass (*Bromus tectorum*) dominated both burned and unburned sites. Despite the invasion of cheatgrass, unburned sites still maintain higher native species richness; however, the high cover of cheatgrass may increase fire frequency.

Updated P-J/Landscapes Report Inserted Here **Woodlands**⁴⁵

Abstract from "Age Structure and Expansion of Pinon-Juniper Woodlands: A Regional Perspective in the Intermountain West"

Numerous studies have documented the expansion of woodlands in the Intermountain West; however, few have compared the chronology of expansion for woodlands across different geographic regions or determined the mix and extent of pre-settlement stands. We [the authors] evaluated tree age structure and establishment for six woodlands in four ecological provinces in the central and northern Great Basin.

Since 1860, the area occupied by pinyon and/or juniper has increased 125-625 percent. The increase of trees was a result of infill into shrub-steppe communities with relatively open low density stands of trees and expansion of pinyon and juniper into sagebrush-steppe communities that previously did not support trees. Woodland expansion in Oregon, Utah, and Nevada were similar, but began two to three decades earlier in Idaho. The majority of woodlands are still in the early to mid phases of stand closure, which means they often support an understory of shrubs and herbaceous vegetation. This has implications for future changes that will occur within these woodlands in the next 30-50 years. In the absence of disturbance or management, the majority of these landscapes will become closed woodlands resulting in the loss of understory plant species and greater costs for restoration.

Historical and Modern Disturbance Regimes, Stand Structures, and Landscape Dynamics in Pinyon/Juniper Vegetation of the Western U.S.⁴⁶

Abstract

Pinyon/Juniper is one of the major vegetation types in western North America. It covers a huge area, provides many resources and ecosystem services, and is of great management concern. Management of pinyon/juniper vegetation has been hindered, especially where ecological

⁴⁵ Miller, Richard F.; Tausch, Robin J.; McArthur, E. Durant; Johnson, Dustin D.; Sanderson, Stewart C. 2008. "Age structure and expansion of pinyon-juniper woodlands: a regional perspective in the Intermountain West" Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 2008

⁴⁶ William H. Romme, Craig D. Allen, John D. Bailey, William L. Baker, Brandon T. Bestelmeyer, Peter M. Brown,, Karen S. Eisenhart, Lisa Floyd-Hanna, David W. Huffman, Brian F. Jacobs, Richard F. Miller, Esteban H. Muldavin, Thomas W. Swetnam, Robin J. Tausch, Peter J. Weisberg; Published by the Colorado Forest Restoration Institute, Colorado State University, Fort Collins, CO, <www.cfri.colostate.edu>, June 4, 2008

restoration is a goal, by inadequate understanding of the variability in historical and modern ecosystem structure and disturbance processes that exists among the many different environmental contexts and floristic combinations of pinyon, juniper and associated species.

This paper presents a synthesis of what we currently know, and don't know, about historical and modern stand and landscape structure and dynamics in three major and fundamentally different kinds of pinyon/juniper vegetation in the western U.S.: Persistent woodlands, savannas, and wooded shrublands. It is the product of a workshop that brought together fifteen experts from across the geographical range of pinyon/juniper vegetation. The intent of this synthesis is to provide information for managers and policy/makers, and to stimulate researchers to address the most important unanswered questions.

Big and Black Sagebrush Landscapes⁴⁷

Excerpt regarding Sagebrush Biology and Reproduction

Big sagebrush is a medium-to-long lived (20-200+ years) aromatic evergreen shrub with one to several main stems. The gray to black bark on older branches is shredded and shaggy. Typical persistent leaves are small, pale green to blue-green, narrowly wedge-shaped, with three blunt teeth on the broadened end. Spring ephemeral leaves are larger and generally more variable in shape and size than persistent leaves.

We suggest that historic *mean fire interval* (MFI) values ranged from 40-80 years for mountain big sagebrush and some productive basin and Wyoming big sagebrush communities and were as long as 100-200 years or longer for big and black sagebrush sites with low productivity. We offer broad estimates here in order to capture the range in MFI length we believe existed across the full ecological and geographical distribution of big sagebrush. A range of intervals lengths must be expected in conjunction with a single MFI value. For example, natural variability corresponding to a MFI of 50 years might produce intervals as short as 10-15 years and as long as 100-120 years; however, most intervals would likely fall between 25 and 75 years.

Soils & Climate Zones⁴⁸

Soils present in the county form the base on which ecosystems develop. Understanding the condition of soils is important to the management of many resources. Resource data on soils varies in level of detail across the county, and presently, there are two levels of data available. These data-sets are as follows:

Kane County Soil Survey: This unpublished report is presently only in a file format and was conducted at a scale of 1:63,360 (1 inch per mile).

STATSGO: The State Soil Geographic Database is generalized soil survey information for the entire state of Utah. This data was collected at a scale of 1:250,000 and can be used at a county or regional level.

⁴⁷ Stanley G. Kitchen & E. Durant McArthur, "Fire Ecology & Management of the Major Ecosystems of Southern Utah", USDA Forest Service, Rocky Mountain Research Station, Nov. 2007, Chap. 5, pgs. 73-95.

⁴⁸ E. Durant MacArthur, Ph.D. Emeritus Scientist, Rocky Mountain Research Station, USDA Forest Service.

There are three climatic zones in the county, summarized below, in which soil information can be generalized.

Climate Zones

Climatic Zones	Precipitation (in)	Temp. (degrees F)	Freeze Free Period (Days)	Elevation (Feet)
Desert	6 to 8	50 to 57	170 to 200	4000 to 4800
Semi-desert	8 to 12	47 to 55	125 to 170	4800 to 6500
Upland	12 to 16	43 to 50	100 to 125	6200 to 7500

The Desert climate zone is found in two general areas of the county:

The Sooner Bench area of the Hole in the Rock Road is typified by soils of very minimal soil development. Soils typically only have developed a horizon of calcium carbonate (lime) accumulation or no other noticeable subsoil development. Structural benches and dunes on Navajo and Entrada Sandstone, the Carmel Formation and quaternary alluvial deposits characterize this area. Important vegetation for this area includes blackbrush, Cutler Mormon-tea, broom snakeweed, Indian rice grass and galleta.

The Big Water area is typified by soils of very minimal soil development, with no noticeable subsurface horizon development. Hill slopes and badlands on Tropic Shale, Dakota Formation and lower members of the Straight Cliffs Formation characterize this area. Important vegetation for this area includes mat saltbush, shadscale, galleta, bottlebrush squirreltail and Indian pipeweed.

The Semi-desert climate zone is found in two general areas of the county:

The Western area of the Hole in the Rock Road is typified by very deep (>60 inches) soils with developed horizons of clay and calcium carbonate (lime) accumulation. Structural benches and dunes on Entrada Sandstone, the Carmel Formation and quaternary alluvial deposits characterize the area. Important vegetation for this area includes Indian rice grass, needle-and-thread grass, globemallow, fourwing saltbush, Mormon-tea and winterfat.

The Highway 89 area between Johnson Canyon and the Cockscomb is typified by very deep soils (>60 inches deep) with development of calcium carbonate (lime) and clay accumulation subsurface horizons. The Moenkopi Formation and quaternary alluvial deposits dominate as the parent material of this area. Important vegetation for this area includes Indian rice grass, galleta, winterfat and big sagebrush.

The Semi-desert to upland transition climate zone is found in two general areas of the county:

The Death Ridge, Carcass Canyon, and Burning Hills areas is typified by shallow soils (10-20 inches deep) with minimal development of calcium carbonate (lime) horizons or no subsurface diagnostic horizons present. The Straight Cliffs Formation dominates as the parent material of this area. Typical landforms consist of structural benches with highly dissected side slope canyons and badland areas of exposed geologic materials. Important vegetation for this area includes galleta, blackbrush, Mormon-tea and Utah juniper.

The Forty Mile area Wahweap Wilderness Study Area (WSA) is typified by shallow to moderately deep soils (10-40 inches deep) over the John Henry member of the Straight Cliffs Formation. Soil development consists dominantly of a horizon of calcium carbonate (lime) accumulation or little to no subsurface soil horizon development. Typical landforms consist of structural benches with highly dissected side slope canyons. Important vegetation for this area includes Utah juniper, pinyon, galleta, Mormon-tea and Bigelow sagebrush.

The Upland climate zone is found in three general areas of the county:

The Fifty Mile Mountain area is typified by shallow to moderately deep soils (10-40 inches deep) over the John Henry member of the Straight Cliffs Formation. Soil development consists dominantly of a horizon of clay accumulation or little to no subsurface soil horizon development. Typical landforms consist of structural benches with highly dissected side slope canyons. Important vegetation for this area includes Indian rice grass, galleta, rock goldenrod, Bigelow sagebrush, green Mormon-tea, pinyon and Utah juniper.

The Kodachrome basin and Skutumpah Road area is typified by diverse soil properties that are found on the Carmel Formation and quaternary alluvial deposits. Landforms consist of dissected side slopes and alluvial fans and flats. Important vegetation for this area includes Indian rice grass, galleta, big sagebrush, bitterbrush, pinyon and Utah juniper.

The Paria-Hackberry WSA consists dominantly of Navajo Sandstone geology with varying depths (20-60 inches deep) of sand. Landforms consist of vegetated dunes and outcroppings of sandstone. Important vegetation for this area includes sand dropseed, Indian rice grass, blue grama, green Mormon-tea, pinyon and Utah juniper.

Soils and soil condition affect the degree of water infiltration. This in turn affects basin storage and availability for a range of resource uses. When management activities result in compaction of soils, runoff from precipitation is accelerated and less water is stored in the soil. The result is higher erosion rates and less available water for plants, animals, and ground water recharge.

End of Report.

Economic and Cultural Report on Livestock Grazing in the Grand Staircase-Escalante National Monument⁴⁹

In 2014, a study was conducted on the dependency of livestock operators on the Grand Staircase-Escalante National Monument (GSENM), researched by Kevin Heaton, Dr. Bruce Godfrey, and Kim Chapman from Utah State University. They sent letters and surveys to every person or business that had a permit to graze an allotment within the boundaries of the Monument, asking questions like: How many acres do you own and/or lease? How many livestock do you own and what percentage of the year do they spend on the monument? Where do you receive your gross income? The ranchers surveyed indicated other businesses in the area were dependent on these ranchers. The ranchers indicated they purchased more than 90% of their operating inputs from local sources. In addition, they locally purchased a high percentage of equipment used on the farm or ranch. The 24 ranchers that returned surveys indicated they employed 35 full time employees (including owners), and 37 part time employees (including owners). This would suggest these ranchers were also a major source of local employment and income.

From the same report, receipts from the sale of livestock were the primary source of gross income for all the livestock operators who returned a survey. The small operators indicated 74% of their gross income was from the sale of livestock with 3% from crop sales and 23% from off-farm income. The mid-sized operations tended to be the most diverse with 70% of gross income from livestock, 8% from crops, 10% from recreation and 7% from off-farm. The large operations were most specialized with 100% of gross income coming from livestock sales.

Results of the survey indicate large operators are most dependent on monument resources for grazing. Their cow herds spend 81% of the year grazing the monument. In comparison, the small and mid-sized operators spend 54% and 43% respectively. The survey respondents manage 1,276 acres of alfalfa hay which would supply approximately 10,700 AUMs (animal unit months). They also manage about 5,600 acres of pasture and 17,500 acres of rangeland. It is not known how many AUMs these lands currently provide because their productivity is unknown.

If grazing was eliminated from the GSENM, there would be major changes in the management and use of private resources. All sizes of operations would feel the effects, particularly the large operators. It was not possible to determine [at the beginning] which, if any, ranchers would go out of business if use of the GSENM was reduced or eliminated.* But any reduction would likely have a negative impact on income and employment in Southern Utah. (*See the results in the Summary of Economic Impact of Livestock Grazing on GSENM, Evaluation of Tourism as Replacement, & Conclusions and Recommendations)

Executive Summary

To determine the economic impact of livestock grazing in the GSENM, Utah State University Extension (USU Extension) and Economic Associates of Utah, Inc. developed a survey to

⁴⁹ Gilbert D. Miller, Ph.D., Doctor of Philosophy and Economics, Utah State University, Economic and Cultural Report on Livestock Grazing in the Grand Staircase Escalante National Monument, 2014.

gather information from livestock grazing permit holders. Data from the completed surveys was used in developing revenue models of livestock grazing on GSENM. The output from the revenue models was analyzed for the economic impacts in the Garfield-Kane County's economic region using the input-output model IMPLAN developed by Minnesota IMPLAN Group, Inc.

The results of the analysis of the surveys and the economic models show:

- (i) Livestock grazing on GSENM is essential to the ranching industry in the region;
- (ii) Ranching is a highly valued culture in the region. It is the base of many community activities and traditions. It also provides social and cultural stability to communities in the region;
- (iii) Ranching is an important part of diversifying the economy of the region;
- (iv) Tourism cannot replace livestock grazing in the GSENM without substantial investments by GSENM, local governments, and the private sector into new tourist support infrastructures and services; and
- (v) GSENM is a multiple-use national monument with many defined missions in the Proclamation including, livestock grazing and science research, which can include rangeland restoration and range management research at an allotment scale.

Kane County has implemented and supports an active management alternative livestock grazing plan for the GSENM through its Resource Management Plan and Chapter 27 Land Use Ordinance that:

- (i) Provides for the activation of all Suspended AUMs in the GSENM;
- (ii) Provides for flexibility in managing timing and placement of cattle within allotments;
- (iii) Provides for restoration of rangelands to promote rangeland health and sustainability;
- (iv) Provides for large scale science research on rangeland restoration;
- (v) Provides for allotment-scale science research with integrated range management;
- (vi) Provides for reseeding using appropriate grasses, forbs, and shrub species;
- (vii) Provides for watershed development by removal of invading woody species that creates risky biological monocultures;
- (viii) Provides for development, improvement and maintenance of water facilities; and
- (ix) Provides for the multiple-use aspects of the monument Proclamation i.e. it is not to be managed as a WSA or wilderness area.

Survey

USU Extension and Economic Associates of Utah, Inc. developed a detailed survey to gather information from GSENM livestock grazing permit holders on their operations. The purpose of the survey was to determine the importance of livestock grazing on GSENM to their operation and to determine how they utilized the AUMs of the permits in the operations.

The survey covered livestock and economic data for the individual permit holders. To assure confidentiality of the individual permit holders operations, USU Extension distributed and collected the surveys and Economic Associates of Utah, Inc. compiled the survey data into spreadsheets and documents for analysis and summary without knowledge of which permit holders completed which surveys. At the time of this report approximately forty percent (40%) of the surveys had been returned to the Extension office and forwarded to the compilers.

Summary of Survey Results

The GSENM provided 35.94% of the AUMs for permit holders ranching operations. Other BLM permits provide 8.22% of AUMs. The Glen Canyon National Recreation Area supplied only 3.56% of the AUMs. The Forest Service provided 20.31% of the necessary AUMs. State Lands contribute 0.89% of the AUMs. Private native rangelands provide 8.70% of the AUMs needed by permit holders. Private improved rangelands provide 1.70% of the AUMs. Irrigated pastures contribute 5.90% of the AUMs. Feeding hay and all other sources of AUMs contribute 14.77% of the needed AUMs annually.

Brood cows consume 86.19% of all AUMs. Replacement heifers use 9.17%. Bulls use 4.64% of the total AUMs.

GSENM permit holders who rent or lease livestock grazing allotment(s) from other permit holder's account for only 16.13% of permit holders. Because the question did not specify the location of the leased permits, it is impossible to determine if these lease or rental agreements are for permits within GSENM.

Permit holders are dependent upon their GSENM permits. One hundred percent of permit holders said there is no cost effective way to replace their GSENM AUMs. Seventy nine percent (79.31%) said they could not reduce the size of their operation to their private property and survive. Seventy two percent (72.24%) stated they would be out of ranching. The difference between the two numbers is that some indicated that they would move to another location to continue ranching. Nearly sixty two percent (61.90%) said they would need to sell their private holdings. Sixty two and one half percent (62.5%) said they would need to find off-ranch work if they were not already working off-ranch. Most of the others said they would retire in place, instead of finding off-ranch work.

Most permit holders have hiking trails or other recreational uses within their allotment(s) (93.35%). The typical problems with recreational use were: (1) gates left open; (2) trash; and (3) damaged property. Many were not having any serious trouble with recreational users. A number of the permit holders said that recreational users enjoyed watching them work the cattle.

The permit holders that indicated the Wilderness Study Areas were part of their allotment(s) said limited access is the major affect on their operations, so far. But encroachment by pinyon-juniper was becoming a major problem.

GSENM permit holders stated there were a number of projects needed to improve their allotment(s). Reseeding was needed on 74.19% of allotments. Fencing was needed on 67.74%

of allotments. Water development projects were needed on 93.55% of allotments. Thinning woody plants was needed on 70.97% of allotments. A flexible livestock grazing plan was needed for 64.52% of allotments. With these improvements, the AUMs were estimated to increase by an average of 88.41%.

Ranching culture within the GSENM is long and extensive. Many families have ranched there for 100 years or more (44.82%). Five and six generations have ranched in the same areas, long before there was a BLM or Monument. Another 19.23% have ranched over 50 years. Only 34.48% have ranched within GSENM for less than 50 years. Ranching is a big part of the culture of the Kane and Garfield County economic region.

GSENM Livestock Grazing Economic Impact on Garfield-Kane Counties

Two economic models were developed to estimate revenues from livestock grazing within GSENM. The first model was used to estimate revenues generated from the Active AUMs in GSENM permits. The second model was used to estimate the revenues that would be generated if the Suspended AUMs were to be restored to the permits. [Printouts from the models are in Appendix E.]

Primary data from the completed surveys were used in both models. Average percent of weaned calves to brood cows, average brood cow death rates, brood cow culling rates, average bull culling rates, average replacement heifer culling rates, average replacement heifer death rates, average price for steer calves, average price for heifer calves sold, average price for cull brood cows sold, average price of culled bull sold and other relevant data were used in the models.

The model for Active AUMs treated the livestock grazing operation as a single ranching operation including all Active AUMs for the livestock grazing allotments within the GSENM, without regard to whether cattle were actually utilizing all AUMs. Since the GSENM livestock grazing permits are essential to most of the ranching operations, all revenues generated on the ranches are dependent on utilization of the GSENM AUMs. Without GSENM AUMs no revenues for most ranches would be generated imposing an economic loss to both ranchers and Garfield-Kane County's economic region. The models for both Active and Suspended AUMs used the same methodology.

The revenues estimated in both models were used in the Garfield-Kane County's economic region IMPLAN models for impact analysis. IMPLAN v3 is an input-output model developed by Minnesota IMPLAN Group, Inc. This model is commonly used by federal, state, and local governments to determine the economic impacts of various public policies, public investments, and private economic activities. The BLM is one of the federal agencies that use IMPLAN on a continuing basis. [Printouts from IMPLAN models are found in Appendix F.]

Summary of Economic Impact of Livestock Grazing on GSENM

GSENM AUMs are used during the times when other livestock grazing AUMs are not available. Therefore, all revenues are dependent on utilizing GSENM livestock grazing permits. The revenue model for active GSENM AUMs estimated that \$11,929,380.75 was

generated annually from utilizing GSENM AUMs when all Active AUMs were available. When this revenue is put into the IMPLAN model the results are summarized below.

Impact Summary		*Copyright 2014 Minnesota IMPLAN Group, Inc.		
Impact Type	Employment	Labor Income	Total Value	Output
Direct Effect	111.3	\$974,174.2	\$2,087,184.9	\$11,929,380.9
Indirect Effect	90.0	\$1,053,293.6	\$3,120,590.5	\$10,703,373.4
Induced Effect	6.7	\$195,407.0	\$501,394.0	\$810,118.6
Total Effect	208.0	\$2,222,874.9	\$5,709,169.4	\$23,442,872.9

Active GSENM livestock grazing permits have the following estimated benefits to the Garfield-Kane County's economic region: Two hundred and eight (208) people are employed generating \$2,223,000 in labor income; \$5,709,000 in total value-added production is added to the Garfield-Kane County's economic region because of utilizing the GSENM livestock grazing allotments. The total annual output affect of the Active GSENM AUMs is \$23,443,000.

The revenue model for Active and Suspended GSENM AUMs estimated that \$16,561,052.32 was generated from utilizing GSENM AUMs of both Active and Suspended AUMs if all were available. When this revenue is put into the IMPLAN model, the results are summarized below:

Impact Summary		*Copyright 2014 Minnesota IMPLAN Group, Inc.		
Impact Type	Employment	Labor Income	Total Value	Output
Direct Effect	154.5	\$1,352,404.7	\$2,897,550.1	\$16,561,052.5
Indirect Effect	124.9	\$1,462,242.8	\$4,332,183.2	\$14,859,038.5
Induced Effect	9.3	\$271,275.2	\$696,064.0	\$1,124,653.2
Total Effect	288.7	\$3,085,922.7	\$7,925,797.3	\$32,544,744.2

The Suspended GSENM AUMs cost the Garfield-Kane County's economic region 81 jobs, \$863,049 in lost labor income, \$2,216,628 in lost total value-added, and \$9,101,801 in lost output.

These lost economic values reduce the quality of life for the people who live and work in the Garfield-Kane County economic region.

Evaluation of Tourism as Replacement for GSENM Livestock Grazing Allotments

From the time President Theodore Roosevelt "*liberally interpreted the 1906 Antiquities Act when he established by proclamation the 1,279-square-mile area Grand Canyon National Monument in 1908.*" (National Park Service Administrative History of the Grand Canyon National Park), tourist activities and livestock grazing have compatibly been part of Garfield-Kane County's economic region.

Ranchers are an important part of the public safety and rescue elements within GSENM. They provide directions and assist lost tourists. GPS systems often lead tourists to places and circumstances they cannot get out of on their own. Ranchers report and monitor activities within

GSENM that would otherwise go unreported and therefore be unknown to GSENM personnel for long periods.

Some tourists and others oppose livestock grazing. Other tourists and individuals support livestock grazing. Many tourists from foreign countries state that seeing cowboys and cattle on the open range in the American West is the highlight of their trip to America. Ranchers report that when tourists see them working cattle they take many pictures to record their experience.

Replacing the \$11,929,380.75 in [annual] revenues generated for the active GSENM allotment AUMs with tourist spending requires:

- (1) A major shift from *windshield tourism* and tour bus accommodations to active destination tourism utilizing the resources found within GSENM. These resources include, but are not limited to, archaeology, paleontology, geology, biology, scenic views and vistas, cultural sites and folklore, and motorized recreation; and
- (2) The Garfield-Kane County's economic region governments and the GSENM will need to invest limited budgets, resources and personnel on public safety and resource management issues on a greater scale than current resources permit. New economic sources and additional personnel will need to be developed.

With an interior GSENM tourism-focus replacing the active GSENM AUMs, when all AUMs are utilized, they are analyzed. Destination tourists might spend \$200 each day; \$200 divided into \$11,929,380 [annually] means that 59,647 visitor days are required to generate the same revenue as the livestock grazing allotments. Prime tourist-days in the Garfield-Kane County's economic region are approximately 120 days. That means 497 tourists per day must be fed, housed, and have a quality vacation experience. With an average of two people per motel room, it would require 249 new rooms to maintain the current service level.

Local governments in some communities will need to upgrade water systems, sewer systems, streets, and public safety and emergency facilities and equipment. These upgrades require substantial public investment, which must be coupled with private investment in tourism supporting facilities, equipment, and programs. Credit in Garfield-Kane County's economic region is asset-based and requires cash-flow to cover all expenses within a short period of time. This results in limited opportunities for current residents to fill tourist needs. Outside capital and management would need to be recruited to fill the needs.

If tourism was to be used to replace both the Active and Suspended GSENM AUMs the challenges are even greater. It would take 82,805 tourist days, 345 more motel rooms, etc. to replace the \$16,561,052 from livestock grazing.

The Total Impact Multipliers for Direct, Indirect and Induced are: Cattle Ranching 1.957599; Hotel and Motels 1.343255; Food Services and Drinking Places 1.305925; Gasoline Stations 1.321562; Retail 1.303830.

Cattle ranching total multiplier is 45.74% larger than the highest tourist related multiplier.

Conclusions and Recommendations

Replacing livestock grazing on the GSENM with revenues would require enormous and completely infeasible investment by the GSENM, local governments, and the private sector. The type of tourism would have to drastically change to include destination tourism to use the resources and values of GSENM to sustain the economy of the Garfield-Kane County's region.

Tourist visitations in the Garfield-Kane County's economic region are dependent upon fuel cost, income levels, and exchange rate. Therefore, tourist visitations are variable. Limiting or removing livestock grazing and replacing with tourism changes the culture, heritage and values of the region.

The economic sustainability of the Garfield-Kane County's economic region is utterly decimated if GSENM livestock grazing allotments are lost by removing an industry, its' supporting industries, and reducing the economic diversity of the region.

Ranching families provide year-round stability to communities that have a relatively high population turnover rate. Ranching has fewer impacts on public safety, emergency, and other public infrastructure resources than tourism.

Therefore, Garfield-Kane County's economic region, local governments, and citizens should vigorously oppose any livestock grazing plan that reduces or eliminates livestock grazing in GSENM.

Garfield-Kane County's economic regional local governments and citizens propose an alternative that:

- (i) Provides for the activation of all Suspended AUMs in the GSENM;
- (ii) Provides for flexibility in managing timing and placement of cattle within allotments;
- (iii) Provides for restoration of rangelands to promote rangeland health and sustainability,
- (iv) Provides for large scale science research in rangeland restoration;
- (v) Provides for allotment-scale science research with integrated range management;
- (vi) Provides for reseeding using appropriate grasses, forbs, and shrub species;
- (vii) Provides for watershed development by removal of invading woody species that create risky biological monocultures;
- (viii) Provides for development and maintenance of water facilities; and
- (ix) Provides for the multiple-use aspects of the monument Proclamation, i.e. it is not to be managed as a WSA or wilderness area.

End of Report.

The historical, cultural, educational and moral benefits of livestock grazing in the Escalante Region Multiple Use/Multiple Functions Grazing Zone are critically vital to Kane County and its residents. The loss of its industry, major revenue source, livelihood and rich historical culture

which brings visitors to Kane County would cause irreparable harm to the economy, its heritage, and the lives of thousands.

Kane County families have grazed and used the land for multiple generations; a loss of a portion of, or all of, its grazing rights impact family economics and dynamics in such a way that once lost cannot be replaced. Kane County has depended on the livestock grazing industry throughout its history to provide economic stability to the county; therefore, livestock grazing must be protected to ensure the health, welfare and safety of the citizens.

The American legend of the “Cowboy” is found throughout the Escalante Region Grazing Zone and is part of the culture and history of Kane County’s “Western Legends.” This cultural legend is what brings the tourism and movie industries to the county, and helps fuel the local economy. With livestock grazing being pushed out of the county by federal policies, this cultural icon, so identifiable with the persona of Kane County, is becoming endangered.

Livestock grazing in Kane County has the greatest impact on county economics and needs to be protected at all costs.

Kane County recognizes the impact and value livestock grazing provides and that the use of its public lands provides an economical benefit for all its residents and tourists. Kane County is sustained by a small population whose livelihoods have maintained the vast openness and natural beauty of the land treasured by visitors. All sources of economic support must be maintained at their highest possible level in order to sustain the economic stability of the County. To ensure this, the Kane County Board of Commissioners, the Land Use Authority, Resource Management Committee, and the Resource Steering Committee have dedicated themselves to a coordinated land use planning effort, which can hold the federal management agencies to standards set by Congress regarding continuation of multiple uses of federal lands.

The Escalante Region Multiple Use/Multiple Functions Grazing Zone is intended to protect some of Kane County’s most valuable assets, our families, our culture and our history that is unique to our area.

Socio-Economic Considerations

It is the position of Kane County to support only those public land plans and decisions that result in a sustainable net benefit to the county’s local economy and population. The county’s coordination agreement should include provisions for a quantitative estimate of the economic effects of all proposed management decisions. These estimates should be generated in consultation with the county. Further, it is the policy of the county that all decisions regarding land use management must take into account the history, culture, and customs of the county as defined by the activities and values that residents of the county, in the past, present, and future, depend upon for well being and subsistence. Customs and culture are defined as the activities and decisions that make the county what it is and has historically been. The county will oppose any activities and plans that adversely impact the customs and culture of Kane County.

Kane County supports efforts to maintain or improve the overall economic base through the judicious use and enjoyment of federal and state lands. The county policy is that economic diversity and long-term stability are beneficial to the welfare of county residents. Any proposed change in land use must evaluate, mitigate, and minimize impacts to customs and culture and the economic stability of the county. The prioritizing of any one multiple-use should only occur after the impacts to other multiple-uses are fully quantified and mitigated. Any proposal to close federal lands to a particular use must be reviewed with the county after public hearings and meetings with county officials.

Recreation

Activities which traditionally define recreation and tourism in Kane County include, but are not limited to, big game hunting, trapping, fishing, horseback riding, trail rides, off-highway vehicle use, mountain biking, hiking, camping, sight-seeing, boating, etc. A majority of these activities occur on public lands. Visitors to these areas directly impact the county by drawing on county-provided infrastructure such as, law enforcement, emergency medical, search and rescue, waste disposal services, and general commercial services. Many of the store owners, restaurants, hotels and motels, and other commercial interests depend on recreation and tourism for their livelihoods. Much of the recreational activity in the county is found in its unincorporated areas, outside of the organized recreation facilities found in many of the cities and towns. These recreational activities are accessed using public lands, and are a tremendous economic asset to the county. It is the county's position that federal and state land managers should do everything possible to enhance recreational opportunities on public lands and that such management should be compatible with principles of multiple-use, and sustained-yield. Any management decisions which restrict recreational activities or access to recreational areas shall be done in consultation with the county and shall be based on valid scientific information.

Updated Socio-Economic Recreation-Activities Report Inserted Here and Inventory List Mineral Resources-Kaiparowits Coal

The Monument contains hundreds of billions of dollars of natural resources and if they were accessible, the fabric of life in Kane County would be positively life altering, and forever changed to the benefit of all, both residents and visitors alike. A report by the Utah Department of Natural Resources, Utah Geological Survey, showed 30 percent of Utah's coal resources are contained within the Kaiparowits Plateau (center of the Monument).⁵⁰ In that study, it said "the coal resources, by far, [were] the County's most important mineral resource".⁵¹ That same group produced another report after the designation of the Monument in a paper called Circular 93 that said, "The value of the known and potential energy and mineral resources of the Grand Staircase-Escalante National Monument at today's prices [1997] is between \$223 billion and \$330 billion. This figure does not include values for tar sands, carbon dioxide reserves, or any of the other mineral deposits such as titanium, zirconium, uranium, or copper."⁵² (Prices break

⁵⁰ R.E. Blackett, C.J. Brandt, T.C. Chidsey, Jr., & C.E. Bishop, "Mineral and Energy Resources in Kane County, Utah and Their Occurrence with Respect to Wilderness Study Areas," Utah Department of Natural Resources, Utah Geological Survey, Report of Investigation 221, April 1992

⁵¹ Ibid. pg. 3

⁵² Circular 93: "A Preliminary Assessment of Energy and Mineral Resources within the Grand Staircase-Escalante National Monument," Preface. Utah Department of Natural Resources, Utah Geological Survey, January 1997.

out as: Coal-\$221 bln-\$312 bln; Coal-bed gas \$2 bln-\$17 bln; Petroleum \$20 mln-\$1.1 bln; Minerals \$4.5 mln-unknown.)

At the time, geologists determined there to be approximately 62 billion tons of coal in the Kaiparowits field and calculated at least 11.3 billion tons of it as recoverable. Most of the coal is too deep to be mined, but at current coal prices (between \$39.05 and \$43.20 a short ton on March 3, 2016)⁵³ that figure would range between \$441.26 billion and \$488.16 billion at market prices. That would translate to billions of dollars in royalties for School Trust lands if it hadn't been traded away for \$50 million (and less productive land) after the Monument had been designated.⁵⁴ Today, 99% of the coal in the Kaiparowits field is federally owned; 1% is state owned.⁵⁵

The type of coal in the Kaiparowits field falls into three categories: high volatile bituminous C, sub-bituminous A, and sub-bituminous B. Coal becomes more valuable on the market when it has a low sulfur content of 4% or less, and has a high btu (British Thermal Unit) element. The critical component is low sulfur⁵⁶ because low sulfur means less pollution. Sulfur content in Kaiparowits coal averages less than one percent⁵⁷, and the btu's (heating ability) ranges from 10,240-16,720 btu's.⁵⁸ "Fewer than 50,000 short tons of coal have been mined to date, and most of the remaining resource would have to be mined using underground methods."⁵⁹

Between 1974 and 1976, the Bureau of Land Management did an Environmental Impact Study on a proposed 3,000 mega-watt, coal-fired, electricity-generating station that would have required a new town, a new highway and federal lands to be transferred to state ownership.⁶⁰ The Final EIS was based on four underground mines, a 500 kilovolt transmission system with a supporting communication network that would span four states (approx. 1,460 miles) to market the power to Arizona and California. Coal leases and water delivery contracts already existed with the Dept. of the Interior. This project was called the Kaiparowits Power Project and was proposed by Southern California Edison Power Company in 1964. The BLM conducted an impact study because Edison did not break ground on the project before the National Environmental Policy Act (NEPA) was enacted in 1969. The project would have been

⁵³ U.S. Energy Information Administration, Coal Markets, average weekly coal commodity spot price for the Uinta Basin on 11,700 Btu, 0.8 SO₂ at \$39.05; and Investment Mine Coal Prices, Thermal Coal Capp Price at \$43.20; www.infomine.com/investment/metal-prices/coal.

⁵⁴ The Utah Office of Energy and Resource Planning projected royalty revenues for the Utah School Trust could be around \$1.54 billion dollars over the life of mining, which was approximately 30 years. Circular 93, Utah Geological Survey, Utah Department of Natural Resources.

⁵⁵ "An Analysis of a Transfer of Federal Lands to the State of Utah," Chap. 8.1.2 pg. 378, Prepared by: Bureau of Economic and Business Research, University of Utah, Utah State University Department of Applied Economics, Weber State University Department of Economics, November, 2014.

⁵⁶ Per James Rasmussen, Geologist, Kanab, Utah. February, 2016

⁵⁷ Circular 93

⁵⁸ R.D. Hettinger, L.N.R. Roberts, L. R.H. Biewick, & M.A Kirschbaum, "Geologic Overview and Resource Assessment of Coal in the Kaiparowits Plateau, Southern Utah," U.S. Geological Survey Professional Paper 1625-B, Appendix 4-Summary of Coal Quality, Tables 1-4, Moist, mineral-matter-free Btu and apparent rank; U.S. Department of the Interior

⁵⁹ Ibid. pg. 143 Coal Resource Summary.

⁶⁰ Final Environmental Impact Statement, Proposed Kaiparowits Project, Bureau of Land Management, Department of the Interior, March, 1976. Chapter I of IX, Summary, pg. iii (Nine volumes, plus Regional Analysis for Development of Coal in Southern Utah)

grandfathered in had any part of the construction started prior to NEPA's enactment since Utah had already approved the project.

When public comment was solicited, strong opposition was received from many environmental groups who tried fervently to influence the BLM against the project. "The EIS indicated strong reliance on the opinions of non-governmental sources in the final assessment of the project."⁶¹ "A total of sixty-six non-governmental (NGO) organizations provided input to the EIS. Of those, fifty-seven could be considered environmentalist groups."⁶²

In the Final EIS, the BLM had estimated the total population increase from the Kaiparowits Power Project would be 14,000 people, of which, 9,000 would be absorbed by Kane County. Most of the employment would be for the coal mine operation (over 2,500), but initially, statistics showed over 2,000 jobs just for the generating station. At its peak, close to 4,000 people would have been employed between the generating station, coal mine construction, limestone quarry construction and operation, and support facilities. These numbers do not include employees necessary to construct the new town or the 67 miles of highway that would have been required from Highway 89 to Cannonville in Garfield County.⁶³

The project was abandoned because it was fought and delayed so long "the cost of producing a ton of Kaiparowits coal increased five-fold before a single ton could be mined."⁶⁴ Edison sold its coal lease options in the late 1980s to a Dutch energy company, Andolex Resources, and they made plans "for a 10,000-acre strip mine on the plateau...to mine Kaiparowits coal and ship it to energy-hungry nations such as Japan."⁶⁵ Andolex proposed opening a 2 million ton-per year coal mine on property situated between Wahweap and Burning Hills.⁶⁶ Their plan for transporting the coal was less intrusive than the KPP; they intended to haul it by truck over upgraded access roads to railheads at Moapa, Nevada; Williams, Arizona; and Cedar City, Utah. For six years, Andolex worked at obtaining everything they needed until President Bill Clinton designated the Grand Staircase as a Monument and derailed their plans.

Updated Mineral and Energy Resources Report Inserted Here **Other Mineral & Energy Resources**

Since the designation of the Grand Staircase-Escalante National Monument, no large commercial-grade (sized) mining operation has been attempted or allowed to extract coal from the Plateau. Several small mining claims for various other minerals are still active for minerals

⁶¹ D.K.Sproul, (doctoral candidate at the University of Nevada, Las Vegas), "Environmentalism and the Kaiparowits Power Project, 1964-76"; Utah Historical Quarterly, Fall 2002, Volume 70, No. 4.

⁶² Ibid.

⁶³ Final Environmental Impact Statement, Proposed Kaiparowits Project, Bureau of Land Management, Department of the Interior, March, 1976. Chapter I of IX, pages iii, I-221 (Nine volumes, plus Regional Analysis for Development of Coal in Southern Utah)

⁶⁴ D.K.Sproul, (doctoral candidate at the University of Nevada, Las Vegas), "Environmentalism and the Kaiparowits Power Project, 1964-76"; Utah Historical Quarterly, Fall 2002, Volume 70, No. 4. As drawn from Deseret News, April 15, 1976. The cost of producing one tone of coal in 1964 was approximately \$7. By 1976, the same ton of coal cost \$35 to extract.

⁶⁵ Ibid.

⁶⁶ R.E. Blackett, C.J. Brandt, T.C. Chidsey Jr., & C.E. Bishop, "Mineral and Energy Resources in Kane County, Utah and Their Occurrence with respect to Wilderness Study Areas", Report of Investigation 221, April 1992, Utah Geological Survey, Utah Department of Natural Resources.

such as gypsum-anhydrite, copper, iron, thorium, titanium, zirconium, gemstones, and abrasives. There are also significant deposits of sand and gravel within the Grand Staircase. Although there are claims that are listed as having uranium, they are not being mined at this time.

Other metallic and industrial minerals are widely scattered throughout the county. In an investigative report by the Utah Geological Survey⁶⁷ heavy materials are found in the Straight Cliffs of the Monument. They include magnetite, ilmenite (titanium), rutile, quartz, calcite, monazite, garnet, sphene, hematite, and anatase. Manganese is found along the Kitchen Corral Wash near Paria as well as gypsum (west of the Cockscomb). Limestone, which is used in the production of cement, lime, flux for steelmaking, filtration material, poultry grit, coal-mine rock dust, fillers and extenders, and calcium carbide, is found within the Chinle formation on the Grand Staircase.⁶⁸ Some of the best sand and gravel pits reported by the Utah Department of Transportation have been mined from Kitchen Corral Wash and beds adjacent to the Paria River.⁶⁹

According to the Utah Geological Survey uranium mineralization is associated with copper, vanadium and silver, and that is found along Fifty Mile Bench, the Cockscomb and Buckskin Mountain areas on the Monument.⁷⁰ Both oil and gas have also been drilled for, and though there have been what experts call “hydrocarbon shows” all of the wells were classified as dry. However, researchers did a geochemical analysis that indicated there were “relatively untested...hydrocarbon reservoirs” throughout Kane County and these untapped sources “warranted future exploration.”⁷¹

Utility Corridors

There are three utility corridors on the Grand Staircase; two for electricity, and one designated for the Lake Powell Pipeline. The electricity corridors are being utilized by Garkane and Rocky Mountain Power Companies; one runs north and south along Cottonwood Road crossing into Garfield County on the north end and connecting to a line that runs east and west on the lower portion of the Grand Staircase near the Utah/Arizona border. A spur of the line from Cottonwood also parallels Highway 89 to Big Water.

Kane County follows the criteria for Rights-of-Way for power lines on the Monument.

Per Public Law 105-355, a utility corridor was designated along Highway 89 on October 31, 1998, “that extends 240 feet north from the center line of the highway, and 500 feet south from the center line of the highway”⁷² extending from Glen Canyon National Recreation Area to Mount Carmel Junction. It will be utilized for the Lake Powell Pipeline, a 130-mile water conveyance system, which will run from Lake Powell to Sand Hollow Reservoir in Washington

⁶⁷ Ibid. pg. 15.

⁶⁸ Ibid. pg. 19.

⁶⁹ Ibid.

⁷⁰ Ibid. pg. 20.

⁷¹ Ibid. pg. 28.

⁷² Grand Staircase-Escalante National Monument Management Plan, Bureau of Land Management, November 1999, Rights-of-Way, LAND-9, pg. 50.

County. Kanab will build a spur off the pipeline which will divert 10,000 acre feet of water per year (it's percentage of the Colorado River annual allotment). (A map showing the utility corridor will be adopted for this region.)

Wildlife Management

Wildlife management issues on public lands have the potential to impact the county substantially. Wildlife management not only impacts public land use and access, but it can affect land uses which lead to restrictions and even takings. Recreational factors, such as hunting and fishing, are a vital part of the county's economic base. Recovery plans for sensitive, threatened and endangered species must include evaluation, mitigation, and support of the county's customs and culture, and economic viability. Wildlife management plans shall reduce predation of sensitive species, increase hunting and fishing opportunities (within appropriate carrying capacities), decrease game damage conflicts, and balance wildlife numbers with other factions, representing the customs and culture and multiple-use values of the county.

The county supports responsible wildlife habitat preservation, development, and management. However, Kane County opposes designation of critical habitat areas in the county when the species is not native to or does not exist in the proposed critical habitat area. Threatened and endangered species should not be introduced into locations where such species are not present.

Kane County will oppose the relocation of Wild Horses or Burros onto the Grand Staircase or anywhere in the county.

It is Kane County's policy that federal agencies fully quantify and cause mitigation measures to be adopted that would effectively lessen the impact to wildlife populations while carrying out animal damage management activities. Public land managers shall:

1. Allow currently recognized methods of predator control, including aerial gunning of predators, as viable options for predator control on public lands in the county.
2. Conduct non-predator animal damage management such as controlling small mammal populations, and necessary environmental analysis and disclosure on public lands.
3. Coordinate with other federal and state agencies to improve effectiveness of control program activities conducted on federal and state lands.
4. Use an integrated approach to the management and prevention of animal damage programs. Consider a full range of methods, including physical barriers, repellents, habitat manipulation, biological controls, improvement of soil fertility, pesticides, hunting and trapping. Use licensed hunting, fishing, and trapping as a control technique where practicable.
5. Evaluate the effect of agency actions on trends in hunting and, where appropriate, address declining trends. Implement actions that expand and enhance hunting opportunities for the public.
6. Consider the economic impact hunting has on the county when implementing agency actions.
7. Manage wildlife habitats on public lands in a manner that expands and enhances hunting opportunities.

8. Work collaboratively with state governments to manage and conserve game species and their habitats in a manner that respects private property rights and state management authority over wildlife resources.

Wildlife Habitats

The county provides habitat for nearly 400 species of vertebrates and an unquantified number of species of invertebrates. Some animals are migratory through the county and others are year-around residents; still others use the county as seasonal habitat.

Many species of birds use the county as breeding and nesting areas and populations of elk move onto the county for winter use. Mule deer and Big Horn sheep are year-long residents. The main riparian systems allow fish to move in and out of the county depending on water flows and seasons. These water systems are the main habitat for most of the identified species of birds.

Habitat manipulation has been a customary practice for improving the vegetation for wildlife for many years and should continue until the desired vegetation mix is achieved. Water in this desert environment is essential to maintain the wide variety of wildlife species in the county. This includes the riparian systems of the Kanab Creek and Paria rivers for fish, amphibians and other associated wildlife species that depend on minimum stream flows. Wildlife populations have grown to depend upon water catchment devices constructed over the years.

There are several species of wildlife listed as threatened or endangered found within Kane County. Some are listed under the Federal Endangered Species Act and some are identified under the Utah Sensitive Species List (see the chart). Some are *candidates* and require more study.

Group	Name	Scientific Name	Population	Status
Birds	California condor	Gymnogyps californianus	Portions of AZ, NV, & UT	Exp. Pop., Non-Ess.
Birds	Yellow-billed Cuckoo	Coccyzus americanus	Western U.S. DPS	Threatened
Birds	Greater sage-grouse	Centrocercus urophasianus	entire	Candidate
Birds	Mexican spotted owl	Strix occidentalis lucida	Entire	Threatened
Birds	Southwestern willow flycatcher	Empidonax traillii extimus	Entire	Endangered
Fishes	Humpback chub	Gila cypha	Entire	Endangered
Fishes	Colorado pikeminnow	Squawfish/Ptychocheilus lucius	Entire, except EXPN	Endangered
Fishes	Bonytail chub	Gila elegans	Entire	Endangered
Fishes	Razorback sucker	Xyrauchen texanus	Entire	Endangered
Flowering Plants	Jones Cycladenia	Cycladenia humilis var. jonesii		Threatened
Flowering Plants	Kodachrome bladderpod	Lesquerella tumulosa		Endangered
Flowering Plants	Siler pincushion cactus	Pediocactus sileri		Threatened
Flowering Plants	Welsh's milkweed	Asclepias welshii		Threatened
Mammals	Utah prairie dog	Cynomys parvidens	U.S.A.(UT)	Threatened
Snails	Kanab ambersnail	Oxyloma haydeni kanabensis	Entire	Endangered
Insects	Coral Pink Sand Dunes Tiger Beetle	Cicindela limbata albissima		Candidate

(From the chart)

Birds:

The **California condor** is considered an experimental/non-essential population of bird, yet is among the largest and rarest in North America. It can be seen in California, Arizona or over the red-rock cliffs of southwestern Utah. It has a wingspan of nearly 10 feet and a body that's four

to five feet long. It can reach speeds of 50 miles per hour and travel up to 200 miles a day in search of food. The California condor often winters in Arizona, but several from the southwestern population soar over Utah. They can travel back and forth between the Grand Canyon and Zion National Park in a single day. The birds commonly visit Utah between April and November; peak numbers usually occur from June through August.⁷³ No nests have been found in the Grand Staircase.

The **Yellow-billed cuckoo** was listed as threatened in 2014, but there are no nests within the Grand Staircase or Kane County.

The **Greater sage-grouse** has been listed as a candidate for ‘threatened species’ and the BLM has indicated it has a wintering habitat in the Skutumpah/Glendale Bench area of the Staircase of approximately 10,500 acres. However, according to Kevin Heaton, Utah State University Extension Faculty in the Garfield/Kane County office, Kane County’s sage-grouse population “is not essential to the survivability of the species.” Heaton has independently tracked the sage-grouse over the last ten+ years, keeping statistics on the leks, and he stated Kane County’s sage grouse are only “important for maintaining the historical range.” Kane County has adopted the State’s ‘Conservation for Greater Sage-grouse in Utah’ plan (see Appendix I).

When the **Mexican spotted owl** nests in the canyon lands of southern Utah it prefers the narrow slickrock canyons closely associated with cliff-forming rock formations like it finds in Zion, Canyonlands, Capitol Reef, and Grand Canyon National Parks. It is not reliant on extensive forest cover though it likes mixed conifers and pinyon-junipers.⁷⁴ In the northern portion of its range, which includes northern Arizona, Utah, New Mexico and Colorado, the owls nest primarily in steep-walled, rocky canyons. These canyon systems vary in the amount of forest cover present, but in general they are less heavily forested than are canyons occupied farther south.⁷⁵ Pinyon-juniper woodlands and mixed-conifer forest are prominent cover types used in these canyon systems, but in some cases these canyons are entirely or largely lacking forest or woodland cover.⁷⁶

In Utah, the type of incised canyon habitat occupied by Mexican spotted owls is present in Dinosaur National Monument, Desolation Canyon, the San Rafael Swell, Zion National Park, Grand Staircase-Escalante National Monument, Glen Canyon National Recreation Area, Capitol Reef National Park, and Canyonlands National Park. Canyon habitat also occurs in the Dixie, Manti LaSal, and Fishlake National Forests and on large tracts of land managed by the BLM.⁷⁷ Kane County sits in the U.S. Fish & Wildlife’s Colorado Plateau Ecological Management Unit, of which, there are 206 documented Mexican Spotted Owl sites.

⁷³ Utah Division of Wildlife Resources, Department of Natural Resources, <http://wildlife.utah.gov/california-condors-rescued-from-the-brink-of-extinction> Downloaded April 8, 2016.

⁷⁴ Mexican Spotted Owl Recovery Plan, First Revision, Sept. 2012; U.S. Fish & Wildlife Service, Southwest Region, Quoted by: Kertell 1977, Rinkevich and Gutiérrez 1996, Willey 1998b, Willey and van Riper 1998, 2007, Willey and Ward 2004, Bowden 2008. Ganey and Dick 1995, Willey 1998b.

⁷⁵ Ibid.

⁷⁶ Ibid.

⁷⁷ Ibid.

Although the **Southwestern willow flycatcher** is still on the list as endangered, there have been no confirmed nesting sites in Kane County on the Grand Staircase for 25 years. In the final ‘Environmental Assessment for the Designation of Critical Habitat for the Southwestern Willow Flycatcher’ the U.S. Fish & Wildlife state: “While six of the seven management units contain flycatcher territories in their other river segments, the Paria River segment occurs in the only management unit in which no territories have been confirmed since 1991.”⁷⁸

Fish:

The **Humpback chub** is not found in any of the waters within the Grand Staircase or within Kane County. Even though the species is listed as endangered, populations of humpback chub are found in eight reaches of the Colorado River basin in western Colorado, Utah, and Grand Canyon. The largest of these populations is in Grand Canyon National Park. In fact, the confluence of the Colorado and Little Colorado Rivers in Grand Canyon supports the largest of the six remaining populations of humpback chub in the world.⁷⁹ There were records of humpback chub in Lake Powell before 1988 when the water wasn’t so cold, “the numerous threats to extant populations are derived primarily from the fundamental ecological changes that have followed the damming of major rivers and tributaries in the Colorado River drainage. Changes in sediment deposition, flow, and water temperature caused by dams have resulted in loss and alteration of aquatic habitats and have favored non-native competitors and predators.”⁸⁰

The **Colorado pikeminnow’s** situation is similar to the humpback chub; its situation changed with the creation of dams along the Colorado River. It is mostly restricted to the upper Colorado River Basin, although the Utah Dept. of Natural Resources published evidence of the fish on Lake Powell at the mouth of the San Juan River in its ‘Vertebrate Information’ report.⁸¹ There is no report of the Colorado pikeminnow in the Grand Staircase or in Kane County.

The **Boneytail chub** has not been found in the wild (outside fish hatcheries since the 1980s).⁸² The last record of capture from Lake Powell was prior to 1990.⁸³ Once again, the decline of this fish is the result of “fundamental ecological changes that have followed the damming of major rivers and tributaries in the Colorado River drainage.”⁸⁴

The **Razorback sucker** was historically found throughout the Colorado River Basin of Wyoming, Colorado, Utah, Nevada, Arizona, and New Mexico. Most wild fish are now found in Lake Mohave, which represents the largest population within the lower basin. A few adults have been found in Lake Mead and Lake Havasu. In the upper basin, they can be found in unimpounded waters of the Green, Yampa, and main-stem of the Colorado River.⁸⁵ Before the damming of the Colorado River, the species was one, large group, but the damming of the

⁷⁸ EIS Prepared by the Mangi Environmental Group for the Department of the Interior, U.S. Fish & Wildlife Service in December 2012; pg. 27.

⁷⁹ www.nps.gov/grca/learn/nature/fish-humpback-chub.htm Downloaded April 11, 2016

⁸⁰ “Vertebrate Information” W.R. Bosworth, Publication No. 03-45, Compiled by the Utah Natural Heritage Program, State of Utah, Department of Natural Resources, Division of Wildlife Resources, pgs. 7-9, 2003.

⁸¹ Ibid.

⁸² Ibid. pg. 10.

⁸³ Ibid. pg. 10.

⁸⁴ Ibid.

⁸⁵ www.fws.gov/southwest/SJRIP/GB_FS.cfm Downloaded April 11, 2016

tributaries broke them up into several smaller groups and a few didn't survive. There is no evidence of this fish in the Grand Staircase or in Kane County.

Flowering Plants:

Jones Cycladenia (also known as Jones' Waxy Dogbane) is found in Kane, Garfield, Emery and Grand counties. It is a long-live herbaceous forb from the primrose family. It grows in arid sites at 4,300 to 6,000 ft. elevation in desert scrub and juniper communities making the Grand Staircase one of the perfect environments it has adapted to. It is known by its pink or purple trumpet-shaped flowers that resemble morning glory flowers. It has recently been determined this plant is genetically similar to California populations of *Cycladenia humilis* and has therefore been recommended for delisting.⁸⁶

Kodachrome pladderpod (also known as Breaks Bladderpod) is found only in Kane County (in Utah) and there is a single known population of scattered occurrence in the Kodachrome Flats area of the Paria River drainage.⁸⁷ Most of the species range is within the Grand Staircase and the Kodachrome Basin State Park. There is no threat to the species from cattle grazing because it occurs outside of the reproduction season for the species and it is thought that grazing impacts are minimal. However, road construction and OHV use are a concern.

The **Siler pincushion cactus** is found along the Kane County/Arizona border and is not in the Monument area. It is sensitive to OHV use, grazing, mining and the possibility of the Lake Powell Pipeline (being directly in its path).

Welsh's milkweed is currently known to occur in three populations in Kane County: Coral Pink Sand Dunes, Sand Hills, and Sand Cove (along the Utah/Arizona border). It is also found to grow in sagebrush, juniper and ponderosa pine communities on dunes from Navajo Sandstone which is on the Monument outside the Clark Bench area, and the Cockscomb Allotment. It was determined that OHV and cattle have minimal impact on the plant population.

Mammals:

The **Utah prairie dog** is listed as a threatened species for Kane County, but is only listed as a "sensitive" species under the Utah Division of Wildlife Resources. Although they have been endemic to southwestern Utah, they have only been located in the upper northwest section of the county, and not on the Monument.

Snails:

The **Kanab ambersnail** is a critically endangered species listed in 1992 by the U.S. Fish & Wildlife Service. It has two known habitats: Three Lakes, a privately owned wet meadow near Kanab and a large, riverside spring called Vaseys Paradise in the Grand Canyon. It a landsnail restricted to wetlands, springs and seeps, but there is no known occurrence on the Monument.

⁸⁶ "Threatened, Endangered & Candidate Plant Species of Utah," TN Plant Material No. 52, USDA, Natural Resources Conservation Service Boise, Idaho and Salt Lake City, Utah, January 2013 Revision.

⁸⁷ Ibid. pg. 28

Insects:

The **Coral Pink Sand Dunes Tiger Beetle** is confined to the Coral Pink Sand Dunes three miles north of the Utah/Arizona border. It was delisted as a threatened species and downgraded to “candidate”. The biggest threat to this beetle is drought and OHV use. There are no incidents of the Tiger Beetle on the Monument.

Wildlife Management-Mitigation

It is Kane County’s intent to maintain, improve or mitigate wildlife habitat in order to sustain viable and harvestable populations of big game and upland game species as well as wetland/riparian habitat for waterfowl, fur bearers and a diversity of other game and non-game species.

FLPMA provides that it is the policy of the United States that BLM administered lands be managed in a manner that will protect the quality of multiple resources, provide food and habitat for fish, wildlife and domestic animals, and provide for outdoor recreation and human occupancy and use. The Public Rangeland Improvement Act directs improvement of rangeland conditions and provides for rangeland improvements which include habitat for wildlife. The authority for management of wildlife rests solely with the State of Utah. See U.S. Constitution, Article IV, Section 3, Clause 1, and 10th Amendment; see also, Utah Enabling Act, Section 1.

Kane County will be an active partner in the development of wildlife management plans and activities for lands within the county.

Kane County will consult with the Utah Division of Wildlife Resources, all affected land owners, lessees and permittees in the development of specific wildlife population targets, harvest guidelines, depredation mitigation and guidelines for future site specific management plans affecting upland, water fowl and big game habitat. Such plans will include provisions to document incidents of wildlife depredation and the extent of game animal harvest in designated management areas of both land and wildlife management agencies. The county will encourage accelerated planning, approval and completion of additional water developments, rangeland treatment projects and prescribed burns with objectives for enhancement of big game and other wildlife habitat.

Kane County will insist that land management agencies provide all necessary maintenance of exclusion fences not specifically placed for improved management of livestock.

The Kane County Resource Development Committee will invite private land owners to regularly report instances of wildlife poaching and related concerns regarding wildlife habitat on private land. The county will formally request participation in the development and establishment of population targets and management guidelines for upland game, water fowl, and big game species.

Kane County will request annual reports from land management agencies regarding monitoring activities undertaken on range improvement projects, rights-of-ways, woodcuts, mining

activities, mineral leases and material sales contracts, and multiple recreation uses, to document habitat improvement or disturbance.

Kane County will continue to oppose any listing of a threatened or endangered species which does not include an analysis of the impacts to the county's economic base. Kane County will also continue to oppose the BLM's listing of threatened and/or endangered species such as the Southwestern willow flycatcher when it has not nested on the Grand Staircase in over 15 years, and the data they have collected continues to show there is no evidence of the birds' habitat anywhere in the region. Kane County will also oppose the relocation of non-native species such as Wild Horses or Burros on the Grand Staircase especially if it competes with habitat, forage and water resources for the current population.

Collaboration to Protect Wildlife

Prior to 2013, there was a 12-mile stretch of U.S. 89 that was considered a killing zone for the Paunsaugunt mule deer. Seen as one of the most treasured herds in the Southwest, these deer crossed the highway twice a year during its migration; once when it summered in Utah and again when it wintered in Arizona. The Utah Department of Transportation (UDOT) had historical data indicating an average of 132 mule deer being killed each year in vehicle collisions between Kanab and the Arizona border. According to the Western Transportation Institution (Montana University) these collisions were costing approximately \$6,600 each; but when this was reported to Congress in 2007, the amount had risen to \$8,388, with an approximate \$2,000 value given for the deer.

Per the Utah Division of Wildlife: "The Utah Division of Wildlife uses a variety of tools to identify potential wildlife vehicle collision problem areas throughout the State of Utah. The wildlife collision problem on Highway 89 was highlighted using data from multiple sources such as agency census counts, habitat mapping using GIS software, UDOT's carcass removal and wildlife collision database, radio telemetry research, input from local sportsmen, and decades of institutional knowledge from current and former DWR personnel. Based on all that data we have gleaned the following facts over the years about the Paunsaugunt mule deer herd as it relates to Highway 89: The UDWR maintains GIS habitat layers for mule deer that are regularly updated and refined to identify mule deer habitat by season of use as well as value. The Paunsaugunt Plateau north of Highway 89 is identified as *crucial summer range*, and the Buckskin Mountain area [as well as] points south of Highway 89, are identified as *crucial winter range*. This essentially means that this herd is highly motivated on moving between these two areas, [making] Highway 89 a dangerous obstacle. The Paunsaugunt mule deer herd is beloved by the sportsmen of Utah for the quality of bucks it produces. The Paunsaugunt Wildlife Management Unit is one of the state's premium limited entry hunt units."

In May 2009, several local, state, and federal agencies gathered together with members of the public to mitigate the problem. Their combined efforts created the "U.S. 89 Kanab Paunsaugunt Project" with the goal of preventing wildlife from entering the highway right-of-way, and/or provide a means for escape if they got trapped there. Over a 12.25-mile stretch of road crews built or upgraded wildlife exclusion fencing on both sides of the highway. Where there were

existing culverts, underpasses were built to funnel the deer through, plus three more were added for a total of seven.

Wildlife escape ramps were installed every 1.5 to 2.5 miles; right-of-way fences were upgraded; cattleguards were installed at specific locations, and a total of 28 cameras were positioned at each underpass, (at fence ends and at each of two double cattleguards). The cameras were installed and are being monitored by Utah State University.

The U.S. 89 Kanab Paunsaugunt Project was completed in August, 2013 and monitoring will continue until 2018. In the Fall/Autumn, cameras documented over 3,000 mule deer utilizing the underpasses during peak migration even though they were skittish and had a tendency to gather at the mouth of the tunnels. Crews had to post signs along the highway to warn tourists not to stop and frighten the herds when the phenomena caught the attention of people passing in vehicles.

According to Monte Aldridge, UDOT “This project has been a great example of what our agencies can do when we collaborate to find solutions. In 2009, when we scheduled our first meeting in Kanab, we did not have a project scope defined or a funding source identified. However, we knew we needed to start identifying the challenge or we would never get to a solution. This project is the epitome of collaboration and building partnerships. It would have been impossible for any of the agencies to have independently completed a meaningful project.”

The partnership of inter-agencies and non-profit groups that successfully completed this project were: UDOT, Utah Division of Wildlife Resources, Bureau of Land Management (Grand Staircase-Escalante National Monument), Arizona Game & Fish Dept., Federal Highway Administration, Kane County, Mule Deer Foundation, Sportsmen for Fish & Wildlife and others. UDOT provided \$625,000 in enhancement funds, BLM obtained \$1.5 million in FHWA public lands grant, Kane County provided in-kind contributions through labor and equipment (i.e. cattleguards), and other agencies and groups brought forward more contributions. In all, they raised over \$2.5 million.⁸⁸

Water-Surface & Subsurface

There are limited sources of water in the Grand Staircase-Escalante National Monument. There are a few rivers, springs, seeps, wells, and tinajas. The surface water eventually flows into the Colorado River either at Lake Powell or below Glen Canyon Dam. Last Chance Creek and Wahweap Creek flow off the Kaiparowits Plateau into the main body of Lake Powell; the Paria River extends from Bryce Canyon-Bryce Valley and meets at the confluence of Cottonwood Creek and then flows intermittently to the Colorado River near Lee’s Ferry. Hackberry Creek is another water source nearby that is part of the Paria River sub-basin.

⁸⁸ Total approximate cost \$2,517,000: Arizona Game & Fish/Sportsmen Club \$130,000; Utah Dept. Wildlife Resources \$100,000; GSENM/FHA Public Roads Grant \$1,525,000; GSENM Cultural Resources Staff Help \$10,000; UDOT R-4 Transportation Enhancement \$625,000; Kane County Cattle Guards Est. \$125,000; Sportsmen for Fish & Wildlife Signs & Fence Maintenance Est. \$2,000.

There are approximately 114 seeps and springs registered through a GIS system with Kane County. Most are just numbered, but those that are named include: Hog Canyon Spring, Ram Spring, Nipple Spring, Tibbet Spring, Local Coyote Spring, Clints Spring, Maple Seep, John Henry Spring, Wildcat Spring, Harry Colwes Spring, Cottonwood Spring, First Point Spring, Tank Hollow Spring, Old Corral Spring, Needle Eye Water, Pool Hollow Spring, Sand Spring, Cave Spring, Pleasant Grove Spring, Mudhole Spring, Fortymile Spring, Fuller Spring, Pocket Hollow Spring, Elbo Spring, Adams Springs, Fourmile Water, Tommy Water, Kaibato Spring, Pine Spring, Round Valley Seep, Circle Spring, Headquarters Springs, Rock Springs, and Hardhead Water Spring.

The groundwater that serves the Grand Staircase Region is the same aquifer group that flow into the Glen Canyon Region. The Navajo Sandstone aquifer is considered the most relevant regional water source.⁸⁹ According to the U.S. Geological Survey, the Navajo Sandstone aquifer developed during the Jurassic period and is part of the Dakota-Glen Canyon aquifer system (also referred to as the Glen Canyon Group). That system contains the Navajo, Glen Canyon, Dakota, and Wingate aquifers. (An additional aquifer, the Entrada, is located within the San Rafael group.) Those aquifers lay in layers above the Coconino Mesa Verde-De Chelly aquifer.

Kane County will cooperate with the State of Utah to achieve the provisions of the State of Utah Water Quality Plan, while complying with Utah constitutional and statutory law as to vested water rights and control of in-stream flow. The county will support efforts to maintain or improve riparian areas and aquatic habitat that represents a range of variability for functioning condition.

Article XVII of Utah Constitution recognized and confirmed the existence of rights to water use in Utah. The nature of water rights as rights of realty, the process by which such rights are acquired, and protection of such vested rights are outlined in Utah Code, Title 73. Utah Code guarantees the right to water livestock from in-stream flow and addresses water quality issues through designation of beneficial uses, specific water quality standards to meet beneficial uses, and the processes to follow in achieving the standards where they are deficient. (See Utah Code, Title 73, Chapter 3, and Title 19, Chapter 5.)

Federal land management agencies must comply with Utah Water Quality Act including the processes set forth for achieving water quality standards. Utah Code §§ 19-5-105 and -105.5 outline all rules for regulating water quality must be consistent with the Federal Clean Water Act. Kane County will be an active participant in state and federal water quality planning and implementation actions that affect waters within the county.

Updated Report on “Yield in Water” Transportation-RS 2477 Roads

It is Kane County’s policy that all county roads that lie within the Grand Staircase remain open to travel by conventional vehicles, both street-legal and properly registered All-Terrain Vehicles, Off-Highway Vehicles and Off-Road Vehicles as long as these vehicles are registered

⁸⁹ “Groundwater Conditions in the Lake Powell Area, Utah” by Paul Blanchard, Hydrologist, U.S. Geological Survey & UT Dept. of Natural Resources, Division of Water rights, 1986, pgs. 1-2

and equipped in compliance with all State and local laws and regulations. Out-of-State vehicles traveling on Kane County roads within the Grand Staircase will be properly registered and equipped as required by the State in which it is registered.

The Grand Staircase has a limited number of county maintained roads and even fewer paved ones. The majority of the paths through the Staircase are on primitive, dirt roads, which require four-wheel drive or high clearance vehicles during inclement weather.

Kane County maintains approximately 35 roads on the Monument, mostly on its perimeter. The majority of the interior roads (over 450 @ approx. 1,514 miles) are being claimed by Kane County as R.S. 2477 rights-of-way. In 1866, Congress enacted a law to authorize the construction of roads and trails across federal land. That law, Revised Statute 2477 (Section 8 of the Mining Act of 1866), provided that, "The right-of-way for the construction of highways over public land, not reserved for public uses, is hereby granted." Although R.S. 2477 was repealed when the Federal Land Management Policy Act of 1976 was enacted, all roads and trails used up to 1976 were grandfathered in.

Kane County asserts its citizens have been using the R.S. 2477 roads for decades, some prior to the designation of the Monument, and some prior to the use of motorized vehicles, when driving livestock across county lines. The roads and trails on the Grand Staircase have been used by generations of ranchers, farmers, hunters and settlers over the last 110 years when Mormons and pioneers used the open range to make their living off the land. It is how places like Dance Hall Rock and Hole-in-the-Rock got their names; when the pioneers worked their way across the range. The descendents of the original pioneers who continued to use the trails that became dirt roads, which were then driven by truck and eventually by ATV, are now dying off, but they still left an indelible route that belongs to the citizenship.

In April 2008, Kane County initiated an action under the Federal Quiet Title Act, (28 U.S.C. § 2409a), for two roads, and later amended it to include 15 roads. The case was heard in Federal District Court in August, 2011, and Kane County was granted rights to 12 of the 15 roads it requested. Five of those roads were on the Grand Staircase: Nipple Lake Road, two sections of Swallow Park Road, North Swag Road and Skutumpah Road (total of 46.85 miles). Since then, Kane County has initiated actions on the remaining roads and road segments throughout the county. The attached map at the end of this Region shows the extent of the R.S. 2477 roads Kane County has used for decades. There are approximately 1,514 miles of R.S.2477 roads on the Grand Staircase, alone. The BLM opposes Kane County's action on 312 of these roads.⁹⁰

Air Quality

Utah is responsible for regulating air quality in the region where the Grand Staircase is located and it has adopted the National Ambient Air Quality Standards (NAAQS) implemented by the Environmental Protection Agency. There are two kinds of standards established by the NAAQS: 1) *primary*-protecting human health; and 2) *secondary*-protecting public welfare (focused on visibility and ecosystem).

⁹⁰ Per email communication from Lou Pratt, GIS Director, Kane County.

The closest monitoring station is in Hurricane, Utah approximately 75 miles west of the Staircase. Other than the Navajo Steam Station outside of Page, Arizona to the east, there is no immediate industry pollution that would directly affect the Monument's air quality. Indirectly, there is smog from Los Angeles, and Las Vegas, and ozone pollution from China and other countries around the world that have been suspected of affecting air quality.

Wildfire has the potential to affect air quality on the Monument should one start and burn out of control, but there is no record of any recent ones.

There is a haze generated from the Burning Hills area on the Kaiparowits Plateau where coal is burning underground. This is in part of a Wilderness Study Area in the Canyonlands sections of the Colorado Plateau physiographic province. Geologists say it's likely been burning for eons and was started by a lightning strike.⁹¹ It is speculated there are large underground caverns of coal on fire and both the smoke and the smell is seeping out through cracks in the rock.

⁹¹ Holland, James, BLM geologist; "Fires may have been burning for eons in southern Utah" by John Hollenhorst. Posted May 4, 2014. KSL.com

ITEM #2

KANE COUNTY ORDINANCE NO. O 2016 -10

AN ORDINANCE AMENDING TITLE 9 CHAPTER 16 OF THE KANE COUNTY LAND USE ORDINANCE AND TITLE 2 CHAPTER 3 OF THE KANE COUNTY CODE

WHEREAS, the Kane County Planning Commission and Kane County Board of Commissions desire to make recommended changes to Title 9 Chapter 16 and Title 2 Chapter 3 of the Kane County Land Use Ordinance;

WHEREAS, the Kane County Planning Commission, after a duly noticed public hearing, recommended for approval amendments to Title 9 Chapter 16 and Title 2 Chapter 3 of the Kane County Land Use Ordinance;

WHEREAS, the Kane County Board of Commissioners desire to implement the recommended amendments; and

WHEREAS, the Kane County Board of Commissioners, in a duly noticed public meeting, received the recommended amendments to Title 9 Chapter 16 and Title 2 Chapter 3 of the Kane County Land Use Ordinance and desires to enact the recommendations;

NOW THEREFORE, THE COUNTY LEGISLATIVE BODY OF KANE COUNTY, STATE OF UTAH, ORDAINS AS FOLLOWS:

Title 9 Chapter 16 and Title 2 Chapter 3 of the Kane County Land Use Ordinance is amended as set forth in the following pages. Additions to the Ordinance are indicated with an underline, and deletions from the ordinance are indicated with a strike-through. Instructions to the codifiers are italicized and inside parenthesis.

9-16-3: DEFINITIONS:

The following terms are defined for the purposes of this chapter as follows:

//

Subdivision Sign: a sign that is placed at the entrance of a subdivision or other residential or commercial project as part of a distinct architectural or landscape feature that identifies the project and displays the project name.

//

9-16-5: REGULATIONS OF SIGNS BY ZONE:

Refer to the following table. Except as detailed otherwise in this section, no sign may exceed twenty five feet (25') in height.

//

Zone	Sign	Size	Height	Location	Other
All zones	<u>Subdivision</u>	<u>No taller than 6 ft.</u>	<u>6' max.</u>	<u>Entrance to subdivision</u>	<u>No lights shall be used in a residential zone</u>

//

2-3-4(C): ORAGNIZATION OF COMMITTEE:

C. Meetings: The committee shall establish and publicly announce its own meeting schedule, but it shall meet ~~at least one time per calendar month~~ as needed. All meetings of the committee shall be public meetings. Subcommittees may meet without the public meeting requirements set by state law, but subcommittee reports shall be made at each committee meeting.

----- **End of Ordinance** -----

This Ordinance shall be deposited in the Office of the County Clerk, and shall take effect fifteen (15) days after the date signed below.

The County Clerk is directed to publish a short summary of this Ordinance with the name of the members voting for and against, together with a statement that a complete copy of the ordinance is available at the Office of the County Clerk, for at least one publication in a newspaper of general circulation in the county, or as otherwise permitted and required by Utah State Law.

ADOPTED this 10th day of September, 2016.

ATTEST:

 KARLA JOHNSON
 Kane County Clerk

 Dirk Clayson, Chair
 Board of Commissioners
 Kane County

Commissioner Clayson voted _____
 Commissioner Matson voted _____
 Commissioner Smith voted _____

KANE COUNTY COMMISSION AGENDA REQUEST:

Regular or Work Meeting

Date of Commission Meeting Requested: Sept 12, 2016

Dept. /Business Name: ITS

Topic/Re: Overtime for Spillman Repair

Dept. Head/Owner: Dave Owens

Meeting Requested by: Dave Owens

Contact name & #: _____

Notes: _____

ITEM # 4

KANE COUNTY COMMISSION AGENDA REQUEST:

Regular or Work Meeting

Date of Commission Meeting Requested: Sept 12, 2016

Dept. /Business Name: Kane County Insurance
Committee Dave Owens Chair

Topic/Re: 2017 insurance renewal

Dept. Head/Owner: Dave Owens

Meeting Requested by: Dave Owens

Contact name & #: _____

Notes: _____

ITEM # 5

**AGREEMENT
BETWEEN
OWNER AND ENGINEER
FOR
PROFESSIONAL SERVICES**

This is an Agreement effective as of August 29, 2016, between KANE COUNTY (“OWNER”) and JONES & DeMILLE ENGINEERING, INC. (“ENGINEER”).

OWNER retains ENGINEER to perform professional services, in connection with Kane County ▪ Johnson Wash EWP (“Assignment”).

OWNER and ENGINEER, in consideration of their mutual covenants as set forth herein, agree as follows:

ARTICLE 1–ENGINEER’S SERVICES

1.01 Scope

- A. ENGINEER shall provide the services set forth in Exhibit A and shall not be responsible to provide any services not expressly contained in Exhibit A (Scope of Work) and Exhibit B (Standard Terms and Conditions).
- B. Upon this Agreement becoming effective, ENGINEER is authorized to begin services set forth in Exhibit A.
- C. If authorized in writing by OWNER, and agreed to by ENGINEER, services beyond the scope of this Agreement will be performed by ENGINEER for additional compensation.

ARTICLE 2–OWNER’S RESPONSIBILITIES

2.01 General

- A. OWNER shall have the responsibilities set forth herein and in Exhibit A.

ARTICLE 3–TIMES FOR RENDERING SERVICES

- 3.01 ENGINEER’s services will be performed within the time period or by the date stated in Exhibit A.
- 3.02 If ENGINEER’s services are delayed or suspended in whole or in part by OWNER. ENGINEER shall be entitled to equitable adjustment of the time for performance and rates and amounts of compensation provided for elsewhere in this Agreement to reflect reasonable costs incurred by ENGINEER in connection with, among other things, such delay or suspension and reactivation and the fact that the time for performance under this Agreement has been revised.

ARTICLE 4—PAYMENTS TO ENGINEER

4.01 Methods of Payment for Services of ENGINEER.

A. OWNER shall pay ENGINEER for services rendered under this Agreement as follows:

1. OWNER shall pay ENGINEER for services rendered under this Agreement as described in Exhibit A and in the amounts and by the methods described in Exhibit C.

4.02 Other Provisions Concerning Payment

A. *Adjustments.* ENGINEER's compensation is conditioned on time to complete the Assignment not exceeding the time identified in Exhibit A. Should the time to complete the Assignment be extended beyond this period due to reasons not the fault of and beyond the control of ENGINEER, the total compensation to ENGINEER shall be appropriately adjusted.

B. *Reimbursable Expenses.* Reimbursable Expenses means the actual expenses incurred by ENGINEER or ENGINEER's consultants directly in connection with the Assignment.

C. *For Additional Services.* OWNER shall pay ENGINEER for all services not included in the scope of this Agreement on the basis agreed to in writing by the parties at the time such services are authorized by OWNER.

ARTICLE 5—DESIGNATED REPRESENTATIVES

5.01 Contemporaneous with the execution of this Agreement, ENGINEER and OWNER shall each designate specific individuals as ENGINEER's and OWNER's representatives with respect to the services to be performed or furnished by ENGINEER and responsibilities of OWNER under this Agreement. Such individuals shall have authority to transmit instructions, receive information, and render decisions relative to the Assignment on behalf of their respective party.

ARTICLE 6—CONTENT OF AGREEMENT

6.01 The following Exhibits are incorporated herein by reference:

- A. *Exhibit A*, "Further Description of Services, Responsibilities, Time, and Related Matters," consisting of 2 pages.
- B. *Exhibit B*, "Standard Terms and Conditions," consisting of 5 pages.
- C. *Exhibit C*, "Reimbursable Expenses Schedule," consisting of 1 page.
- D. *Exhibit D*, "Duties, Responsibilities, and Limitations of Authority of Resident Project Representative," consisting of 5 pages.

6.02 Total Agreement

This Agreement (consisting of pages 1 to 3, inclusive, together with the Exhibits identified in Paragraph 6.01) constitutes the entire agreement between OWNER and ENGINEER and supersedes all prior written or oral understandings. This Agreement may only be amended, supplemented, modified, or canceled by a duly executed written instrument.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement, the Effective Date which is indicated on page 1.

OWNER:

Kane County

By: _____

Name: Dirk Clayton

Date Signed: _____

Address for giving notices:

76 North Main St.

Kanab UT 84741

Designated Representative:

Name: Lou Pratt

Title: GIS/Transportation

Phone Number: 435-644-0968/435-899-0945

Facsimile Number: _____

Email Address: gis@kane.utah.gov

ENGINEER:

Jones & DeMille Engineering, Inc.

By: _____

DocuSigned by:

Darin Robinson

901449362020420...

Name: Darin Robinson

Date Signed: August 29, 2016

Address for giving notices:

1535 South 100 West

Richfield UT 84701

Designated Representative:

Name: Darin Robinson

Title: Vice President

Phone Number: 435-896-8266

Facsimile Number: 435-896-8268

Email Address: darin@jonesanddemille.com

This EXHIBIT A, consisting of 2 pages, referred to in and part of the Agreement between Owner and Engineer for Professional Services dated August 29, 2016.

Further Description of Services, Responsibilities, Time and Related Matters

Specific articles of the Agreement are amended and supplemented to include the following agreement of the parties:

A.1.01 ENGINEER's Services

A. ENGINEER's services shall be provided consistent with and limited to the standard of care applicable to such services, which is that Engineer shall provide its services consistent with the professional skill and care ordinarily provided by consultants practicing in the same or similar locality under the same or similar circumstances. ENGINEER and/or its consultants shall complete the Assignment and related work including the following:

- a. *Complete design report, quality assurance plan, operation and maintenance report, and other documents currently required by NRCS for the EWP program;*
- b. *Design of irrigation diversion, riprap erosion and bank armor structures;*
- c. *Design typical cross sections and site drawings in accordance with NRCS EWP guidelines and provide such for NRCS review and approval;*
- d. *Project bidding and construction drawing and specification documents in accordance with current NRCS EWP guidelines;*
- e. *Permitting including: BLM SF-299, BLM & GSNM Agency coordination (Cat. Ex. Level), State Stream Alteration, Cultural Resources field work and documentation coordination.*
- f. *Periodic project construction observation, testing and engineer site visits;*
- g. *Construction weekly reports submittal to NRCS and contract record drawings;*
- h. *Provide OWNER with administrative support.*

A.2.01 OWNER's Responsibilities

- A. OWNER shall do the following in a timely manner, so as not to delay the services of ENGINEER:
1. Contact property owners and acquire construction access agreements (JDE to provide supporting drawings).
 2. Review and verify final drawings for accuracy and completeness.
- B. ENGINEER shall be entitled to use and rely upon all such information and services provided by OWNER or others in performing ENGINEER's services under this Agreement.
- C. OWNER shall bear all costs incident to compliance with its responsibilities pursuant to this paragraph A.2.01.

A.3.01 Times for Rendering Services

- A. The time period for the performance of ENGINEER's services shall be within the milestones established as follows:

1. All work will be completed within eight (8) months of the date of this contract pending OWNER's personnel field data collection or as requested and mutually agreed upon by the OWNER and ENGINEER.
- B. ENGINEER's services under this Agreement will be considered complete when all deliverables set forth in Exhibit A are submitted to OWNER.

This **EXHIBIT B**, consisting of 5 pages, referred to in and part of the Agreement between Owner and Engineer for Professional Services dated August 29, 2016

Standard Terms and Conditions

Article 6 of the Agreement is amended and supplemented to include the following agreement of the parties:

B.6.01.B Standard Terms and Conditions

1. Standard of Care

The standard of care for all professional services performed or furnished by ENGINEER under this Agreement will be the care and skill ordinarily used by member of ENGINEER's profession practicing under similar circumstances at the same time and in the same locality. ENGINEER makes no warranties, express or implied, under this Agreement or otherwise, in connection with ENGINEER's services.

2. Independent Contractor

All duties and responsibilities and undertaken pursuant to this Agreement will be for the sole and exclusive benefit of OWNER and ENGINEER and not for the benefit of any other party. Nothing contained in this Agreement shall create a contractual relationship with or a cause of action in favor of a third party against either OWNER or ENGINEER. ENGINEER's services under this Agreement are being performed solely for OWNER's benefit, and no other entity shall have any claim against ENGINEER because of this Agreement or the performance or nonperformance of services hereunder. OWNER agrees to include a provision in all contracts with contractors and other entities involved in this project to carry out the intent of this paragraph.

3. Payments to ENGINEER

Retainer amounts shall be made in accordance with Article 4.01. Work will be halted if additional retainer amounts are not made in a timely manner.

4. Insurance

ENGINEER will maintain insurance coverage for Workers Compensation, General Liability, and Automobile Liability and will provide certificates of insurance to OWNER upon request.

5. Indemnification and Allocation of Risk

a. To the fullest extent permitted by law, ENGINEER shall indemnify and hold harmless OWNER, OWNER's officers, directors, partners, and employees from and against costs, losses, and damages (including but not limited to reasonable fees and charges of engineers, architects, attorneys, and other professionals, and reasonable court or arbitration or other dispute resolution costs) caused solely by the negligent acts or omissions of ENGINEER or ENGINEER's officers, directors, partners, employees, and consultants in the performance of ENGINEER's services under this Agreement.

b. To the fullest extent permitted by law, OWNER shall indemnify and hold harmless ENGINEER, ENGINEER's officers, directors, partners, employees, and consultants from and against costs, losses, and damages (including, but not limited to, reasonable fees and charges of engineers, architects, attorneys, and other professionals, and reasonable court or arbitration or other disputes resolution costs) caused by the negligent acts or omissions of OWNER or OWNER's officers, directors, partners, employees, and consultants with respect to this Agreement.

c. To the fullest extent permitted by law, ENGINEER's total liability to OWNER and anyone claiming by, through, or under OWNER for any injuries, losses, damages and expenses caused in part by the negligent entity or individual, shall not exceed the percentage share that ENGINEER's negligence bears to the total negligence of OWNER, ENGINEER, and all other negligent entities and individuals.

d. In addition to the indemnity provided under paragraph B. 6.01.B.5.b. of this Exhibit, and to the fullest extent permitted by law, OWNER shall indemnify and hold harmless ENGINEER and ENGINEER's officers, directors, partners, employees, and consultants from and against injuries, losses, damages and expenses (including, but not limited to, all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other disputes resolution costs) caused by, arising out of, or resulting from Hazardous Environmental Condition, provided that (i) any such injuries, losses, damages and expenses are attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property, including the loss of use resulting therefrom; and (ii) nothing in this paragraph B.6.01.B.5.d shall obligate OWNER to indemnify any individual or entity to the extent of that individual or entity's own negligence or willful misconduct.

e. The indemnification provision of paragraph B.6.01.B.5.a. is subject to and limited by the provisions agreed to by OWNER and ENGINEER in paragraph B.6.01.B.6, "Limit of Liability," of this Agreement.

f. ENGINEER's commitments as set forth in this Agreement are based on the expectation that all of the services described in this Agreement will be provided. In the event OWNER later elects to reduce design professional's scope of services, OWNER hereby agrees to release, hold harmless, defend and indemnify ENGINEER from any and all claims, damages, losses or costs associated with or arising out of such reduction in services.

6. Limit of Liability

To the fullest extent permitted by law, the total liability, in the aggregate, of ENGINEER and ENGINEER's officers, directors, partners, employees, agents, and consultants, or any of them to OWNER and anyone claiming by, through, or under OWNER, for any and all injuries, losses, damages and expenses, whatsoever arising out of, resulting from, or in any way related to this Agreement from any cause or causes, including, but not limited to, the negligence, professional errors or omissions, strict liability or breach of contract or warranty, express or implied, of engineer or engineer's officers, directors, partners, employees, agents, and consultants, or any of them, shall not exceed the total amount of compensation for services.

7. Consequential Damages

Notwithstanding any other provision of this Agreement, and to the fullest extent permitted by law, neither OWNER nor ENGINEER, their respective officers, directors, partners, employees, contractors or subconsultants, shall be liable to the other or shall make any claim for any incidental, indirect or consequential damages arising out of or connected in any way to the Assignment or to this Agreement. This mutual waiver of consequential damages shall include, but is not limited to, loss of use, loss of profit, loss of business, loss of income, loss of reputation and any other consequential damages that either party may have incurred from any cause of action, including negligence, strict liability, breach of contract and breach of strict or implied warranty. Both OWNER and ENGINEER shall require similar waivers of consequential damages protecting all the entities or persons named herein in all contracts and subcontracts with others involved in the Assignment.

8. Dispute Resolution

a. OWNER and ENGINEER agree that they shall first submit any and all unsettled claims, counterclaims, disputes, and other matters in question between them arising out of or relating to this Agreement or the breach thereof ("disputes") to mediation.

b. If a party alleges a dispute or controversy with the other party arising out of or relating to the performance of services under this Agreement, then either party shall have the right to request mediation within 20 days after the claiming party has provided the other party with written notice describing the dispute and the claiming party's position with reference to the resolution of the dispute.

c. Except as otherwise agreed, mediation will proceed pursuant to the Construction Industry Mediation Rules of the American Arbitration Association in effect on the Effective Date of the Agreement. A mediator will be appointed within 30 days of receipt of a written request. The mediator will endeavor to complete the mediation within 30 days thereafter.

d. No performance obligation under or related to this Agreement shall be interrupted or delayed during any mediation proceeding except upon written agreement of both parties.

e. The mediator shall not be a witness in any legal proceedings related to this Agreement.

9. Termination of Contract

Either party may at any time, upon seven days prior written notice to the other party, terminate this Agreement. Upon such termination, OWNER shall pay to ENGINEER all amounts owing to ENGINEER under this Agreement, for all work performed up to the effective date of termination, plus reasonable termination costs.

10. Access

OWNER shall arrange for safe access to and make all provisions for ENGINEER and ENGINEER's Consultants to enter upon public and private property as required for ENGINEER to perform services under this Agreement.

11. Hazardous Environmental Conditions

It is acknowledged by both parties that ENGINEER's scope of services does not include any services related to a "Hazardous Environmental Condition," i.e. the presence at the site of asbestos, PCBs, petroleum, hazardous waste, or radioactive materials in such quantities or circumstances that may present a substantial danger to persons or property exposed there in connection with the Assignment. In the event ENGINEER or any other party encounters a Hazardous Environmental Condition, ENGINEER may, at its option and without liability for consequential or any other damages, suspend performance of services on the portion of the Assignment affected thereby until OWNER: (i) retains appropriate specialist consultant(s) or contractor(s) to identify and, as appropriate, abate, remediate, or remove the Hazardous Environmental Condition; and (ii) warrants that the site is in full compliance with applicable laws and regulations. OWNER acknowledges that ENGINEER is performing professional services for OWNER and that ENGINEER is not and shall not be required to become an "arranger," "operator," "generator," or "transporter" of hazardous substances, as defined in the Comprehensive Environmental Response, Compensation, and Liability Act of 1990 (CERCLA), which are or may be encountered at or near the site in connection with ENGINEER's activities under this Agreement.

12. Patents

ENGINEER shall not conduct patent searches in connection with its services under this Agreement and assumes no responsibility for any patent or copyright infringement arising therefrom. Nothing in this Agreement shall be construed as a warranty or representation that anything made, used, or sold arising out of the services performed under this Agreement will be free from infringement of patents or copyrights.

13. Ownership and Reuse of Documents

All documents prepared or furnished by ENGINEER pursuant to this Agreement are instruments of service, and ENGINEER shall retain an ownership and property interest therein. Reuse of any such documents by OWNER shall be at OWNER's sole risk; and OWNER agrees to indemnify, and hold ENGINEER harmless from all claims, damages, and expenses including attorney's fees arising out of such reuse of documents by OWNER or by acting through OWNER.

14. Use of Electronic Media

a. Copies of Documents that may be relied upon by OWNER are limited to the printed copies (also known as hard copies) that are signed or sealed by the ENGINEER. Files in electronic media format of text, data, graphics, or of other types that are furnished by ENGINEER to OWNER are only for convenience of OWNER. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk.

b. When transferring documents in electronic media format, Engineer makes no representations as to long-term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by ENGINEER at the beginning of this Assignment.

c. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

d. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the party delivering the electronic files. ENGINEER shall not be responsible to maintain documents stored in electronic media format after acceptance by OWNER.

15. Opinions of Probable Construction Cost

a. Construction Cost is the cost to OWNER to construct proposed facilities. Construction Cost does not include costs of services of ENGINEER or other design professionals and consultants, cost of land, rights-of-ways, or compensation for damages to properties, or OWNER's costs for legal, accounting, insurance counseling or auditing services, or interest and financing charges incurred in connection with OWNER's contemplated project, or the cost of other services to be provided by others to OWNER, pursuant to this Agreement. Construction Cost is one of the items comprising Total Project Costs.

b. ENGINEER's opinions of probable Construction Cost provided for herein are to be made on the basis of ENGINEER's experience and qualifications and represent ENGINEER's best judgment as an experienced and qualified professional generally familiar with the industry. However, since ENGINEER has no control over the cost of labor, materials, equipment, or services furnished by others, or over the Contractor's methods of determining prices, or over competitive bidding or market conditions. ENGINEER cannot and does not guarantee that proposals, bids, or actual Construction Cost will not vary from opinions of probable Construction Cost prepared by ENGINEER.

If OWNER wishes greater assurance as to probable Construction Cost, OWNER shall employ and independent cost estimator.

16. Opinions of Total Project Costs

a. Total Project Costs are the sum of the probable Construction Cost, allowances for contingencies, the estimated total costs of services of ENGINEER or other design professionals and consultants, cost of land, rights-of-way, or compensation for damages to properties, and OWNER's cost for legal, accounting, insurance counseling or auditing services, and interest and financing charges incurred in connection with a proposed project, and the cost of other services to be provided by others to OWNER pursuant to this Agreement.

b. ENGINEER assumes no responsibility for the accuracy of opinions of Total Project Costs.

17. Force Majeure

ENGINEER shall not be liable for any loss or damage due to failure or delay in rendering any service called for under this Agreement resulting from any cause beyond ENGINEER's reasonable control.

18. Assignment

Neither party shall assign its rights, interests or obligations under this Agreement without the express written consent of the other party.

19. Binding Effect

This Agreement shall bind, and the benefits thereof shall inure to the respective parties hereto, their legal representatives, executors, administrators, successors, and assigns.

20. Severability and Waiver of Provisions

Any provision or part of the Agreement held to be void or unenforceable under any laws or regulations shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and ENGINEER, who agree that the Agreement shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision. Non-enforcement of any provision by either party shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Agreement.

21. Survival

All express representations, indemnifications, or limitations of liability included in this Agreement will survive its completion or termination for any reason.

22. Headings

The headings used in this Agreement are for general reference only and do not have special significance.

23. Controlling Law

This Agreement is to be governed by the law of the state in which the ENGINEER's principal office is located.

24. Notices

Any notice required under this Agreement will be in writing, addressed to the appropriate party at its address on the signature page and given personally, or by registered or certified mail postage prepaid, or by a commercial courier service. All notices shall be effective upon the date of receipt.

This **EXHIBIT C**, consisting of 1 page, referred to in and part of the Agreement between Owner and Engineer for Professional Services dated August 29, 2016

Payments to ENGINEER for Services and Reimbursable Expenses

Article 4 of the Agreement is amended and supplemented to include the following agreement of the parties:

ARTICLE 4 – PAYMENTS TO THE ENGINEER

C4.01 *For Basic Services Having a Determined Scope*

A. OWNER shall pay ENGINEER, for Basic Services set forth in Exhibit A, the following:

Design (lump sum)	\$	115,000
Permitting (lump sum)	\$	20,250
Construction Services (construction staking, material testing; hourly)	\$	<u>50,000</u>
TOTAL	\$	185,250

C4.02 *Standard Hourly Rates*

- A. Standard hourly rates are set forth in Attachment C1 to this Exhibit C and include salaries and wages paid to personnel in each billing class plus the cost of customary and statutory benefits, general and administrative, overhead, non-project operating costs, and operation margin or profit.
- B. The standard hourly rates will be adjusted annually (as of April 1) to reflect equitable changes in the compensation payable to ENGINEER.

This ATTACHMENT C1, consisting of 1 page, referred to in and part of the Agreement between Owner and Engineer for Professional Services dated August 29, 2016

Engineering Services Hourly Rates as of April 1, 2016

Principal	\$	165.00
Senior Planner	\$	160.00
Planner	\$	115.00
Structural Engineer	\$	140.00
Senior Project Manager	\$	145.00
Project Manager	\$	115.00
Senior Project Engineer	\$	125.00
Project Engineer	\$	110.00
Graduate Engineer	\$	90.00
Senior Construction Project Manager	\$	145.00
Construction Project Manager	\$	100.00
Senior Construction Engineering Technician	\$	115.00
Construction Engineering Technician	\$	80.00
Environmental Scientist	\$	100.00
Environmental Technician	\$	75.00
Senior CAD Designer	\$	125.00
CAD Designer	\$	90.00
Senior CAD Technician	\$	75.00
CAD Technician	\$	65.00
Senior GIS Designer	\$	95.00
GIS Technician	\$	75.00
Professional Land Surveyor	\$	115.00
Survey Office Technician	\$	105.00
Survey Technician	\$	75.00
1-Person Survey Crew	\$	125.00
2-Person Survey Crew	\$	190.00
Senior Materials Technician	\$	90.00
Materials Technician	\$	65.00
Accounting Manager	\$	90.00
Accounting Assistant	\$	75.00
Project Accountant	\$	75.00
Administration Manager	\$	80.00
Administrative Assistant	\$	55.00
Intern	\$	50.00
Vehicle Mileage	<i>per mile</i> \$	0.55
4 Wheeler Rental	<i>per day</i> \$	140.00
4 Wheel Rhino	<i>per day</i> \$	200.00
Professional Sub-consultants		Cost + 15%

Duties, Responsibilities, and Limitations of Authority of Resident Project Representative

Article 5 of the Agreement is supplemented to include the following agreement of the parties:

5.02 Resident Project Representative

- A. ENGINEER shall furnish a Resident Project Representative (“RPR”) to assist ENGINEER in observing progress and quality of the Work. The RPR may provide full time representation or may provide representation to a lesser degree.
- B. Through RPR's observations of Contractor's work in progress and field checks of materials and equipment, ENGINEER shall endeavor to provide further protection for OWNER against defects and deficiencies in the Work. However, ENGINEER shall not, during such RPR field checks or as a result of such RPR observations of Contractor's work in progress, supervise, direct, or have control over Contractor's Work, nor shall ENGINEER (including the RPR) have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected or used by any contractor, for security or safety at the Site, for safety precautions and programs incident to any contractor's work in progress, or for any failure of a contractor to comply with Laws and Regulations applicable to such contractor's performing and furnishing of its work. The ENGINEER (including RPR) neither guarantee the performances of any contractor nor assumes responsibility for Contractor's failure to furnish and perform the Work in accordance with the Contract Documents. In addition, the specific terms set forth in Paragraph A1.01 of Exhibit A of the Agreement are applicable.
- C. The duties and responsibilities of the RPR are as follows:
 - 1. *General:* RPR is ENGINEER's representative at the Site, will act as directed by and under the supervision of ENGINEER, and will confer with ENGINEER regarding RPR's actions. RPR's dealings in matters pertaining to the Contractor's work in progress shall in general be with ENGINEER and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with OWNER only with the knowledge of and under the direction of ENGINEER.
 - 2. *Schedules:* Review the progress schedule, schedule of Shop Drawing and Sample submittals, and schedule of values prepared by Contractor and consult with ENGINEER concerning acceptability.
 - 3. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences and other project-related meetings, and prepare and circulate copies of minutes thereof.

4. *Liaison:*
 - a. Serve as ENGINEER's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the intent of the Contract Documents.
 - b. Assist ENGINEER in serving as OWNER's liaison with Contractor when Contractor's operations affect OWNER's on-Site operations.
 - c. Assist in obtaining from OWNER additional details or information, when required for proper execution of the Work.
5. *Interpretation of Contract Documents:* Report to ENGINEER when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by ENGINEER.
6. *Shop Drawings and Samples:*
 - a. Record date of receipt of Samples and approved Shop Drawings.
 - b. Receive Samples which are furnished at the Site by Contractor, and notify ENGINEER of availability of Samples for examination.
 - c. Advise ENGINEER and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by ENGINEER.
7. *Modifications:* Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, to ENGINEER. Transmit to Contractor in writing decisions as issued by ENGINEER.
8. *Review of Work and Rejection of Defective Work:*
 - a. Conduct on-Site observations of Contractor's work in progress to assist ENGINEER in determining if the Work is in general proceeding in accordance with the Contract Documents.
 - b. Report to ENGINEER whenever RPR believes that any part of Contractor's work in progress will not produce a completed Project that conforms generally to the Contract Documents or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise ENGINEER of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection, or approval.

9. *Inspections, Tests, and System Start-ups:*

- a. Consult with ENGINEER in advance of scheduled inspections, tests, and systems start-ups.
- b. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate OWNER's personnel, and that Contractor maintains adequate records thereof.
- c. Observe, record, and report to ENGINEER appropriate details relative to the test procedures and systems start-ups.
- d. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the results of these inspections, and report to ENGINEER.

10. *Records:*

- a. Maintain at the Site orderly files for correspondence, reports of job conferences, reproductions of original Contract Documents including all change orders, field orders, work change directives, addenda, additional Drawings issued subsequent to the execution of the Construction Contract, ENGINEER's clarifications and interpretations of the Contract Documents, progress reports, Shop Drawing and Sample submittals received from and delivered to Contractor, and other Project-related documents.
- b. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, weather conditions, data relative to questions of change orders, field orders, work change directives, or changed conditions, Site visitors, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to ENGINEER.
- c. Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.
- d. Maintain records for use in preparing Project documentation.
- e. Upon completion of the Work, furnish original set of all RPR Project documentation to ENGINEER.

11. *Reports:*

- a. Furnish to ENGINEER periodic reports as required of progress of the Work and of Contractor's compliance with the progress schedule and schedule of Shop Drawing and Sample submittals.

- b. Draft and recommend to ENGINEER proposed change orders, work change directives, and field orders. Obtain backup material from Contractor.
 - c. Furnish to ENGINEER and OWNER copies of all inspection, test, and system start-up reports.
 - d. Immediately notify ENGINEER of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, damage to property by fire or other causes, or the discovery of any Constituent of Concern.
12. *Payment Requests:* Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to ENGINEER, noting particularly the relationship of the payment requested to the schedule of values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.
13. *Certificates, Operation and Maintenance Manuals:* During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to ENGINEER for review and forwarding to OWNER prior to payment for that part of the Work.
14. *Completion:*
- a. Participate in visits to the Project to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of lists of items to be completed or corrected.
 - b. Participate in a final visit to the Project in the company of ENGINEER, OWNER, and Contractor, and prepare a final list of items to be completed and deficiencies to be remedied.
 - c. Observe whether all items on the final list have been completed or corrected and make recommendations to ENGINEER concerning acceptance and issuance of the Notice of Acceptability of the Work.

D. Resident Project Representative shall not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).
2. Exceed limitations of ENGINEER's authority as set forth in this Agreement.
3. Undertake any of the responsibilities of Contractor, Subcontractors or Suppliers.

4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work.
5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of OWNER or Contractor.
6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by ENGINEER.
7. Accept shop drawing or sample submittals from anyone other than Contractor.
8. Authorize OWNER to occupy the Project in whole or in part.

ITEM # 6

KANE COUNTY COMMISSION AGENDA REQUEST:

Regular or Work Meeting

Date of Commission Meeting Requested: 9/12/14

Dept. /Business Name: Roads

Topic/Re: Bid Opening for Graders

Dept. Head/Owner: Bert Harris

Meeting Requested by: Bert Harris

Contact name & #: _____

Notes: _____

ITEM # 7

KANE COUNTY COMMISSION AGENDA REQUEST:

Regular or Work Meeting

Date of Commission Meeting Requested: 9/12/16

Dept. /Business Name: Commission

Topic/Re: 20 Coalition - Joint Action
Litigation

Dept. Head/Owner: _____

Meeting Requested by: _____

Contact name & #: _____

Notes: _____
