Bureau of Land Management
Ely District Office

SNPLMA Round 16 Nomination
Conservation Initiative Project

Develop State and Transition Models Specific to Ecological Sites within Clark and Lincoln Counties – Phase II for Major Land Resource Areas 29 & 30

Amount Requested: $672,012
Project Time Frame: 4 years, 0 months
Nevada Congressional Districts 03, 04

38◦ latitude 115◦ longitude

Maggie Marston
Phone: 775-726-8127
Fax: 775-726-8111
Email: mmarston@blm.gov

I. Purpose Statement

The Bureau of Land Management (BLM), in coordination with the Natural Resource Conservation Service (NRCS) will develop state and transition models for Major Land Resource Areas (MLRAs) 29 and 30 within Lincoln and Clark Counties, and provide the models and how to use them to all land management agencies as well as the public. The project outcome will be a set of ecological site specific models that will strengthen decisions on public land regarding vegetation management actions; and meets the Ely RMP management action VEG-5 to "Focus restoration of undesirable conditions initially on those sites that have not crossed vegetation transitional thresholds."

The state and transition models also provide an easy to understand format to increase public knowledge of land management and the options available to managers for restoration of degraded sites. These models allow land managers to improve management of sustainable ecosystems, while not spending money on impossible strategies such as vegetative treatments to meet a historical climax community that may no longer be possible. They allow resource managers to better understand the dynamics and capability of a particular plant community as it pertains to wildlife habitat, grazing, fire use, invasive weeds and overall watershed health.

II. Background and Need

This proposal seeks to continue Phase I and strengthen decisions regarding vegetation management actions in Lincoln and Clark Counties. Data from this project will also benefit the Basin and Range National Monument Resource Management Plan and other range management decisions within the monument. The approved BLM Ely Resource Management Plan (Ely RMP 2008) recognized that "State and transition models are an important part of the watershed analyses". The models completed for Phase I are being used on a regular basis for rangeland management including vegetation treatment designs, livestock grazing permit analysis, and improving habitat for wildlife, especially sage grouse.

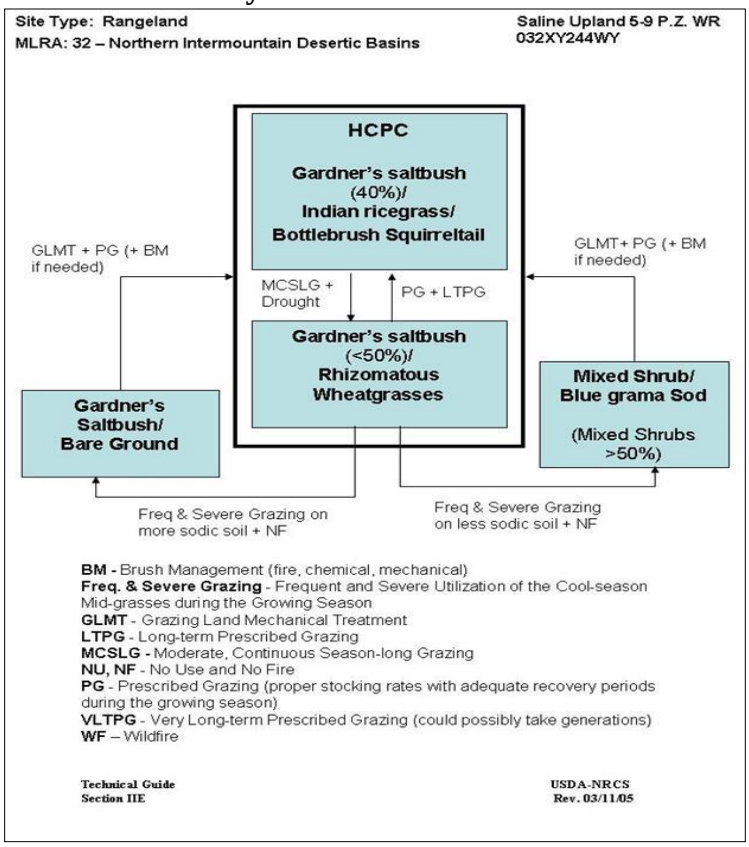
Due to the large area of land the Ely and Southern Nevada BLM Districts manage, this project identified two phases to develop the models, with this proposal seeking funding for Phase II. The first phase developed models for MLRA 28, which covered White Pine County and the northern portion of Lincoln County. Phase II will develop models for MLRA 29 and MLRA 30; completing the remainder of Lincoln County and all of Clark County in coordination with the BLM Southern Nevada District. Models will only be developed for ecological sites within these two counties; however it is anticipated that many of these same ecological sites may also occur beyond these two counties providing far reaching benefits beyond the counties' boundaries.

The BLM uses the best science available to assist in making resource management decisions. The state and transition models used to describe ecological processes on a landscape scale are an important part of this scientific approach. The BLM completed Phase I in 2015 in cooperation with the USDA Natural Resource Conservation Service (NRCS) and the USDA Agriculture Research Service (ARS). This successful coordinated effort included working with the BLM Nevada State Office to seek funding to complete those portions beyond White Pine and Lincoln counties boundaries. Also, Eureka County, adjacent to White Pine County, provided funding to support the development of models within their boundaries on public lands. Those same models

are needed for MLRA 29 and 30, which do not have state and transition models specific to the ecological sites. This is critical with sage grouse populations and habitat found in MLRA 29 and desert tortoise populations and habitat in MLRA 30.

Several resource management decisions are guided by using the ecological site descriptions including livestock grazing, watershed assessment, habitat improvement projects, and vegetation treatments. By developing ecological site models, resource managers have access to creditable scientific data that determines the state of a vegetative community and if it has crossed a threshold into another vegetative community, rather than the current option of managing for a historical climax plant community (pre-European settlement) that may not be possible. With state and transition models land managers can determine what state the plant community is in and determine if the current state needs to be modified. This allows the BLM to put funding sources toward those plant communities that either will be enhanced by treatments or where a specific desired plant community, such as habitat for desert tortoise, needs to be managed for.

Figure 1. Example of State and Transition Model Diagram for an Ecological Site. Steady state is in bold outline.



While other states including Oregon, Idaho, Wyoming and Utah have completed many of these models for ecological sites, currently Nevada ecological site descriptions are lacking these models. The NRCS provides technical expertise in completing soil surveys and ecological site descriptions on public lands.

EC Values the Project Promotes: This project promotes sustainability and connectivity. These models will enable land managers to restore and protect healthy and resilient landscapes that connect important habitats and protect the integrity of the human and biological communities by providing scientific guidance to develop the best science path forward when enhancing habitat or authorizing actions on public lands that impact vegetation, soils and hydrology. Having this information beforehand increases the likelihood of sustainable landscapes that provide habitat connectivity to a variety of wildlife species including destert toirtose and Greater sage grouse. This is especially critical for sage grouse due to the broad landscape they use as habitat and the need for connectivity as they move from one seasonal habitat to another. Loss of connectivity due to decreased resilence in a landscape could impact the species ability to maintain and increase population.

These models also incorporate durability, relevancy, and shared support to ensure benefits in the near and long term. These models will remain relevant for atleast 20 years and most likely beyond that due to the extensive time it take for an upland desert landscape to change and the data that has went into the models to develop them. The models also remain relevant because they are not complex in their presentation and can be used without extensive new technology. Multiple partners including the University of Nevada Reno, USDA Agriculture Research Station, Society of Range Management, and state and local government have provided shared support to ensure the benefits are long term. All federal agencies that manage natural resources including the National Park Service, US Forest Service, NRCS, and BLM in the MLRAs can use these models to develop strategies for effective and efficient ecosystem management. By funding this type of project BLM is actively involved, and our specialists contribute to the model development team based on their experiences with large scale wildfires, grazing and vegetation treatments and results. This all contributes to a stronger model that is durable, relevant and shares support with our sister agencies such as NRCS.

These models do benefit communities by improving the quality of life for the public and encourage interaction with nature. These models are easy to understand and allow the public to have access to the best science information regarding ecological sites. This allows for a transparent process that involve the public in future projects. These models also allow decisions to consider the outcomes in more detail with regard to impacts to vegetation and soils, and will help a manager to determine impacts of an authorization that may benefit the community and how it would impact the natural environment. Also, people who recreate on public lands will have a more fulfilling experience when they observe a landscape with less weeds and more wildlife habitat that provides a recreational benefit while being part of the land.

III. Project Implementation Process:
Project Timeframe: 4 years

Most of the work would be outsourced to experts who have developed state and transition models for ecological sites in Nevada or adjacent states. This project would take four years to complete.

Project Location: The project is located in the southern part of Lincoln County public lands and all of Clark County and encompases approximately 8,765,000 acres. There have been a few

models started near the Lake Mead Recreation Area, and these would be accessed by the team, while developing models for the remainder of Clark County public lands. A map of the location is included as attachment 3.

IV. Primary Deliverables

State and Transition Models

- Complete an inventory and evaluation of vegetative communities.
- Complete State and Transition Models for Ecological Site Descriptions.

Public Outreach

- Finished models will be made available on the NRCS website.
- Presentations on the availability and utility of the state and transition models would be presented at various workshops and meetings.
- Presentations at local schools would demonstrate state and transition models at a student level.

V. Anticipated Deliverables

Restoration

- Restoration activities would incorporate the state and transition models as they are completed.

Monitoring

- Monitoring would follow the RMP/FEIS recommendations. "Vegetation communities in both treated and untreated areas will be monitored to determine progress toward attaining desired range of conditions. Monitoring to determine success in meeting vegetation management objectives will shift to measuring cover, composition, and structure of the community (i.e., the parameters essential for identification of phases within the state and transition model concept). Periodic measurements of vigor and productivity will continue and will utilize standard methodologies (National Research Council 1994; Swanson 2006)."

Adaptive Management

- All monitoring data will be analyzed on an annual basis and existing treatment and restoration plans will be modified as necessary.

VI. Standard Deliverables

- Quarterly reports and annual reports of the results and products of the project will be prepared for the SNPLMA Division.
- Develop scope of work for Interagency Agreements and any contracts/assistant agreements needed.

- Review and approval of all models developed.

This project supports Goals 1 and 2 in the SNPLMA Strategic Plan Conservation Initiative (CI) category that reflects the projects sustainability, connectivity, and community:

Goal 1: Sustain the quality of the outdoor environment by conserving, preserving, and restoring natural and cultural resources.

- *Conserve and Restore Natural Resources – Maintain or increase the quality of natural resources and protect their ecological integrity and sustainability.*

This project will develop models that conserve and restore natural resources by providing scientific guidance to develop the best science path forward when enhancing habitat or authorizing actions on public lands that impact vegetation, soils and hydrology. Having this information beforehand increases the likelihood of sustainable landscapes that provide connectivity to a variety of wildlife species including destert toirtose and Greater sage grouse.

Goal 2: Improve the quality of life for all publics in urban and rural communities by enhancing recreational opportunities that connect people with the outdoor environment.

- *Promote education- Provide opportunities to improve the public's connection with natural, cultural, and recreational resources through education.*

These models are easy to understand and allow the public to have access to the best science information regarding ecological sites. This allows for a transparent process that involve the public in future projects. These models also allow decisions to consider the outcomes in more detail with regard to impacts to vegetation and soils. People who recreate on public lands will have a more fulfilling experience when they observe a landscape with less weeds and more wildlife habitat that provides a recreational benefit while being part of the land.

VII. Relevant Performance Measures

Outcome: Inventory and evaluate to determine vegetative states for upland habitats including Mojave desert, and Great Basin grassland, shrub lands, pinyon juniper forests, and woodland sites. Achieving the following output shall achieve this:

Output: Inventory and evaluate 8,765,000 acres to determine states and transitions of all ecological sites found in MLRA 29 and 30 in Lincoln and Clark Counties. This will fulfill the following performance measure:

Performance Measure 2.1.1 H5: Acres of Upland Habitat Surveyed, Inventoried or Monitored
Report the number of acres of upland vegetation and/or wildlife habitat surveyed, inventoried, or monitored.

Outcome: Interdisciplinary team will develop ecological site reports and models and have them peer reviewed. Achieving the following output shall achieve this:

Output: Develop approximately 150 ecological site reports and models. This will fulfill the following performance measure:

Performance Measure 2.1.4; 2.5.1 O4: Number of Scientific / Technical Reports Produced
Report the number of scientific technical reports produced.

Outcome: Provide workshops for agency employees and the public on development and utility of the models. Achieving the following output shall achieve this:

Output: Provide workshops in at least two local communities and at the National Society of Range Management annual meeting. Anticipated participants are 150 (units). This will fulfill the following performance measure: Performance Measure 2.1.3; 2.5.2 O5 - Number of Outreach Contacts Made Report the number of education and outreach contacts made through interpretation and environmental education, such as number of teachers trained, number of participants in workshops, etc.

Outcome: NRCS will publish completed models on their website for public access. Achieving the following output shall achieve this:
Output: Publish data to one website. This will fulfill the following performance measure: Performance Measure 2.1.3; 2.5.2 O6 - Number of New Interpretive or Education Publications/Signs Produced Report the number of new interpretive or education publications produced, signs produced and installed, public informational websites or other electronic media presentations designed and implemented, and informational or interpretive kiosk displays produced and installed.

Outcome: Provide workshops in at least two local communities and at the National Society of Range Management annual meeting. Achieving the following output shall achieve this:
Output: Three presentations. This will fulfill the following performance measure: Performance Measure 2.1.3; 2.5.3 O7 - Number of Interpretive or Education Presentations Given Report the number of interpretive or educational presentations given.
Report each presentation as one unit.

VIII. Detailed Proposal and Outcomes

BLM Ely District, in coordination with the BLM Southern Nevada District, will develop state and transition models for approximately 250 ecological sites on the district that are within Lincoln County and Clark County. The project is in coordination with the Nevada NRCS office to develop state and transition models specific to ecological sites for the four Major Land Resource Areas (MLRA) 28A, 28B, 29, and 30 as they occur within White Pine, Lincoln, and Clark Counties. Phase I took three years to complete models for MLRA 28A and 28B. Phase II would complete the Ely District and portions of the Southern Nevada District with models developed for MRLA 29 and 30.

Two of the most important parts of this proposal are scientific peer review by a core team and public access to the completed models. The core team is a vital component in developing the models including approximately two weeks of field time and final review of the developed models. The completed models are posted to the NRCS website in combination with the ecological site descriptions. Since these models are written in a public friendly format, it will provide information to many people with an interest in how vegetation on public lands is managed.

The BLM Project Manager time will be charged to this project and related BLM administrative costs. NRCS costs would be similar to those describe for BLM. Model development coordinated with NRCS to select an entity that meets the need and has experience working with models in the Great Basin. The BLM will enter into these agreements through the specific legislative authority in the following acts:

- Federal Land Policy and Management Act of 1976 (FLPMA), as amended, 43 U.S.C Section 1737(b), P.L. 94-579
- Southern Nevada Public Lands Management Act, SNPLMA 1998 (PL105-263)

Outcome 1. Inventory and Evaluation
BLM and NRCS will select a contractor with expertise and experience in developing these models for NRCS in Nevada or adjacent states. These entities will also identify a core team, with each member having over ten years of resource experience specific to MLRA 29 and 30, to provide scientific expertise in the field and provide peer review of the models. Tasks will include inventory and evaluation to determine which vegetative states are present and show opportunities for improvement and management. In order to develop the state and transition models for upland sites in eastern Nevada, there would be a review and grouping of ecological sites by soil depth, texture, aspect, soil temperature, plant community, and plant available moisture present.

Outcome 2. Develop the state and transition models
The development of state and transition models would include identifying vegetative communities' responses to various disturbances. This provides a product to determine practical and feasible courses of action that lead to resolution of resource concerns and resilient vegetative communities. It also provides a product that uses standard rangeland vegetative monitoring methods to determine a vegetative state include vegetative cover and composition. The final products would include:

- Diagram
- Text description of
  - plant dynamics of each state
  - cover and composition of each state
  - detailed explanation of thresholds crossed and pathways to and from each state

This project will develop models in order of priority based on priority of the vegetative community, and amount of disturbance. Vegetative communities with a higher priority would include those that provide habitat to Threatened and Endangered Species and Special Status Species. To determine priority based on amount of disturbance several factors would be considered including fire, grazing (livestock and wild horses), recreation, and other human disturbances.

Outcome 3. Provide Final Products to NRCS for Public Access
The contractor will provide to NRCS the final state and transition models in a format that meets NRCS's requirements to incorporated into the NRCS Ecological Site Descriptions. These are then available on the NRCS website. This will provide an available source of information to anyone with web access including the public, agencies, and organizations.

Outcome 4. Increase public outreach and education programs
This project will build off existing ecological site descriptions and provide state and transition models for public access. Part of using these models is being aware they are available and what information they provide. There will be presentations in Lincoln and Clark Counties on the scientific application, need and utility of state and transition models similar to those done for

Phase I; and a presentation at a professional conference. These presentations provided an opportunity to see this ecological site specialized tool; and learn how this tool resolves issues regarding disturbance actions.

The work that occurred in Phase I and that we have been doing throughout the State caught the attention of many of BLMs permittees, NV Cattlemans Association, Newmont mining and other stakeholders, as well as US Forest Service and National Park Service. The public and other agencies want to learn how to use these models to better manage both private lands and public lands.

Outcome 5. Utilize models on all projects on the BLM Ely District
These models would be utilized for all restoration projects to meet the management action identified in the BLM Ely District Approved Resource Management Plan that states VEG-5 is to "Focus restoration of undesirable conditions initially on those sites that have not crossed vegetation transitional thresholds." These models would also be used in other projects on the district including analysis of grazing allotments, watershed assessments, and other projects that impact vegetation. Coordination meetings would be held each year to determine the value of the completed models on actions within the BLM Ely District including number of projects and acres the models impacted; and the quantitative and qualitative values to the district regarding cost savings and sustainable ecosystems.

Project Implementation Process

Year 1

Identify members of the Model Development Team; this team consists of contracted professionals, NRCS specialists and one BLM specialist with experience in disturbance regimes. Team would determine priority vegetative communities based on the criteria previously described.

Year 2
Team will continue to inventory and evaluation of vegetative states present and identify opportunities for improvement and management in. higher priority vegetative communities Develop state and transition models based on these evaluations.

Year 3
Complete high priority vegetative communities' models and begin work on low priority vegetative communities.

Year 4
Complete lower priority vegetative communities' models depending on remaining funding.

Every Year
Regular meetings will be held each year to determine work outlined for that year. At the end of each year, NRCS facilitates an after action review covering what was completed and areas for improvement. Each year the Model Development Team will identify opportunities to provide

education and outreach to the public and agencies. This will include field visit opportunities to see how models are utilized as well as professional presentations to various audiences.

Also, NRCS will be reviewing the models, and as the models are approved by NRCS, the models will be added to the NRCS web site.

IX. Level of Readiness for Project Implementation

This project is an inventory and analysis with no impacts to the land. No NEPA is required. The district has staff to lead this project and begin implementation when funds become available.

Relationship to Phases

This project is Phase II of the development of State and Transition Models. It is related to this first phase due to the effiency of having partnerships with NRCS and ARS to continue the work of the team. The products of Phase I and II are standalone products, however at a landscape level, they provide a shared benefit.

How Project Completion will be Determined

Project will be completed models for both MLRAs that are provided to the public. A presentation to the Society of Range Management will provide the BLM and NRCS an opportunity to present the benefits of this project to a scientific community.

X. Budget

The BLM is requesting $672,012 for this project. See Schedule B Estimated Necessary Expenses and the Detailed Cost Estimate Worksheet for more information.

Best Value Option for a Viable Project: This project encompases 8,765,000 acres and equates to less than $0.08/acre. It directly benefits two counties, and provides models that can be used by federal land managers, as well as state and local governments. The models also can be used by private landowners that want to manage for a sustainable, natural environment on their private land. The models will also benefit surrounding counties, since they may have the same ecological sites that are found in Lincoln and Clark Counties, and could use the models as well. There is also an effiencey to doing two MRLAs together in the cost to mobilize a team and oversee a project.

There is no other tool available that does this type of predictive modeling. These models are benefitial at many scales including landscape, watershed and project level. Models will enable managers to make better decisions when expending funding for habitat improvement projects, and potentially save the federal government millions of dollars on project implementation based on the potential for success or failure of the project.

XI. Ranking Criteria

1. Project supports one of the three priority types of projects

a. Habitat Enhancement - This project supports habitat enhancement and connectivity by creating state and transition models that provide guidance on the impacts of vegetation treatment projects. Determining the current state of an ecological site and the importance of that site for habitat, will help determine if funding should be spent on habitat enhancement and the

probability of success. These models will also help to determine if an ecological site is transitioning and if this will impact the potential of the habitat.

To add some context, well developed models lead to strong ESDs. Use of ESDs and basing decisions on ecological site potential are a requirement for sage grouse management by both BLM and US Forest Service and how the BLM is moving into the future with adaptive management and the landscape approach. This project will help move Nevada forward into a more holisitic management approach by providing an important component of ESD development.

2. *Project includes public outreach/education as a component* – This project includes an extensive public education and outreach component including local workshops, a national science presentation and public access to the NRCS website where the models will be available. The NRCS has an extensive natural resource data that is updated as new information becomes available and is used by agencies and the public. NRCS has recently been asked to provide information and training on the use of these models by NV Cattlemans association.

3**.** *Project supports 1 of the 20 priority sub-types of projects:*

   a. *Project supports the following priority sub-types*

   - *2. Habitat Enhancement – Endangered Species* – This project will provide state and transition models to improve habitat and connectivity for desert tortoise in the Mojave Desert.
   - *4. Habitat Enhancement – Proactive Steps to Prevent Listing* – This project will provide state and transition models to determine current ecological state and develop restoration treatments that are used to prevent listing of species such as sage grouse.
   - *5. Habitat Enhancement – Invasive Species Treatment and/or Control (Plant or Animal)* – A large component of the state and transition models is determining if invasive species are present and how to prevent their spread.
   - *6. Habitat Enhancement – Restoration of Habitat for Sensitive Species at the watershed or landscape level* – MLRA 29 and 30 are major land resource areas based on the landscape they represent. By building models based on the ecological sites within these major areas, we can determine impacts at the ecological site level and if these impacts will impact the watershed function and the landscape as a whole.

4. Project enhances partnerships in promotion of cooperation and collaboration

a. Involves individual citizen groups or organizations in the development and accomplishment of resource management goals and other activities during project implementation – These models include multiple partners including the University of Nevada Reno who partners with USDA Agriculture Research Station to develop the models. The Society of Range Management has been very supportive of these models and helped promote them across the west providing outreach to universities, state and local government organizations and individuals interested in science based land management including ranchers, wildlife organizations, and others.

b. Addresses the needs of more than one Federal agency – All federal agencies that manage natural resources including the National Park Service, US Forest Service, NRCS, and BLM in the MLRAs can use these models to develop strategies for effective and efficient ecosystem management.

c. Involves non-Federal public partners – University of Nevada Reno scientists are part of the project through an agreement with USDA Agriculture Research Station. These same scientists are working with the Society of Range Management to continue to improve the science behind these models. Although not a partner, industry organizations such as Nevada Cattlemen's Association are supportive of this science and interested in learning more. Also, state agencies such as Nevada Department of Wildlife recognize the value of these models in managing wildlife habitat.

5. Project has identified committed non-SNPLMA sources of funding or in-kind contributions in the development and/or implementation of the project – This project does not have a specific amount identified for inkind or matching. However, BLM-NV State Office is funding this work across other parts of the State through other BLM funding sources and NRCS will be working with the contractor to develop the STMs and associated ESDs. NRCS is crucial in the development of the ESDs, and even though a portion of their time and costs are covered in this nomination, they provide additional support through out the process that can be considered in-kind work. By funding this type of project we are getting a higher quality and level of ESD than what NRCS is currently developing on their own and by BLM being actively involved, our specialists can contribute on the model development team based on their experiences with large scale wildfires, grazing and vegetation treatments and results. This all contributes to a stronger model and support the National approach for NRCS and BLM to work together on rangeland health issues.

Based on the outcome of Phase I, it is expected that by SNPLMA funding this project within Lincoln and Clark County that BLM and NRCS will seek other funding to support the development of models in the MLRAs outside of the counties boundaries. Also, NRCS puts all data on their website and maintains this website as part of their mission. Other inkind support includes the Society of Range Management presentation venue that is provided at no cost to this project other than presenters travel and time. The outreach and advertising is provided by the Society and the presentations are maintained on their website for anyone to review at a later time.

6. Project promotes sustainability by providing benefits in the near and long term by emphasizing healthy and resilient landscapes as well as durability, relevancy, and shared support –

a. Conserves resources to ensure availability to future generations – The development of state and transition models ensures that public land managers have the best scientific information to make decisions that conserve resources. Rather than a manager making a decision and following up based on trial and error, these models provide solid evidence base on previous actions and outcomes and are easily accessible.

b. Restores or maintains natural processes as demonstrated by implementation monitoring within the project timelines – One of the primary benefits of the models is to use the understanding of ecological states and potential/cause of transition to develop plans that when implemented restore or maintain natural processes.

c. Will remain relevant and continue to provide a benefit beyond the existence of SNPLMA **–** These models will remain relevant for atleast 20 years and most likely beyond that due to the extensive time it take for an upland desert landscape to change and the data that has went into the models to develop them. The models also remain relevant because they are not complex in their presentation and can be used without extensive new technology.

d. Includes a stewardship component to broaden support and share responsibility for operating or maintaining the project – These models include broad support and a shared responsibility by the federal agencies and universities doing research of natural resources and landscape scale management. There are also two local workshops to demonstrate the utility of the models.

e. Reduces long-term costs and minimizes the human impact on the environment – One of the greatest benefits of the models is that the data is consolidated and packaged in an easy to understand model. This ensures that land managers will use the models and reduce the trial and error model of managing natural resources on the land including adjusting grazing systems and considering the most effective vegetation treatments for habitat enhancement.

7. Project promotes connectivity by linking people to nature and recreational opportunities, and by uniting important places across the landscape.

a. Encourages people to meaningfully connect with their natural environment and helps them appreciate and care for the environment – This project provides an extensive public access opportunity and the simplicity of the models mean that those interested in their natural environment can increase their understanding of how a landscape changes and what factors may cause these transitions. Statekeholders including grazing permittees, NV Cattlemen's Association and mining companies such as Newmont are all interested in using the models to better manage their private lands and the public lands on which they are authorized.

8. Project promotes community by improving the quality of life for the human community and protecting the integrity of biological communities – 15 pts

a. Conserves or restores the functionality, resiliency, and integrity of biological communities – The primary purpose of the models is to conserve and restore the functionality and resilience of biological communities. The health of the vegetation and the soil are critical to improving biological integrity. The models are a tool that can be used to promote land health. They give land managers the ability to enhance, protect and maintain public lands, develop stronger management precriptions, including developing more successful restoration projects and to help protect areas from future potential degradation.

XII. References

State-and-Transition Models, Thresholds, and Rangeland Health: A Synthesis of Ecological Concepts and Perspectives. D. D. Briske, S. D. Fuhlendorf, F. E. Smeins. *Rangeland Ecology & Management* 2005 *58* (1), 1-10

Schedule B						
Conservation Initiative						
ESTIMATED NECESSARY EXPENSES						
Project Name:	Develop State and Transition Models Phase II					
Project #:		**Priority #:**		**Agencies:**	BLM	
Prepared by:	Mindy Seal					
Phone:	775-289-1944				**Initial**	x
Date:	4/26/2016				**Updated**	

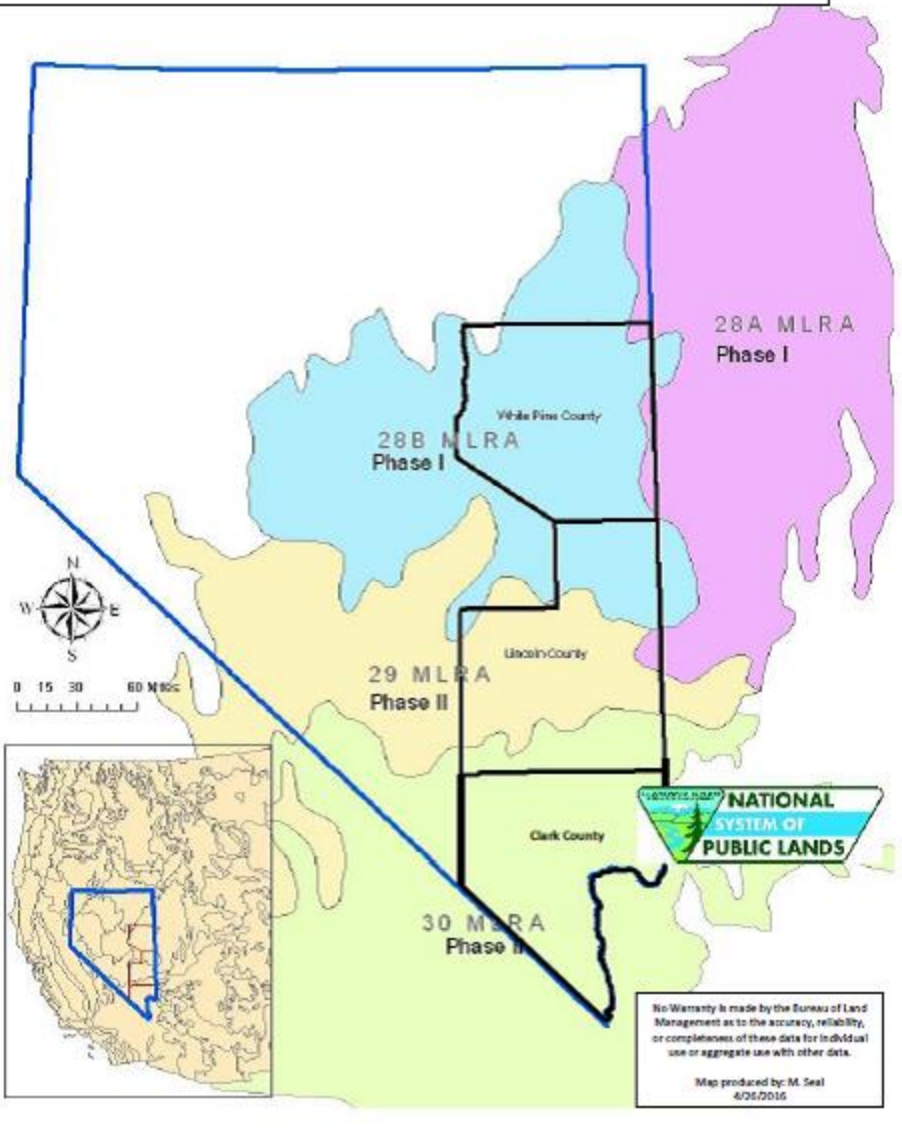
1. Planning & Environmental Documentation		$ -	0%
(Surveys/ reports for cultural, natural, biological, archaeological resources, NEPA documentation, etc)			
2. FWS Consultation - Endangered Species Act			0%
(direct expenses for FWS if consultation is required)			
3. Direct Federal Labor to Implement Project (Payroll)		$ 131,529.00	20%
(Federal labor costs for completing the project)			
4. Project Equipment and/or Supplies/ Materials		$ -	0%
(include specialized equipment, supplies and materials not included in contracts/ agreements)			
5. Travel & Per Diem for Implementation		$ 4,500.00	1%
6. Official Vehicle Use		$ 2,000.00	0%
(Based on agencies procedures for use, fuel, equipment, and mileage charges)			
7. Contracts/Grants/Agreements to complete the project		$ 500,869.00	75%
8. Other Direct and Contracted Labor		$ 33,114.00	5%
Agency payroll for the Contracting Officer, COR, Project Inspector, Sec. 106 consultation if required, NEPA Lead, Project Manager, Project Supervisor, and subject experts to review contracted surveys, designs/drawings, plans, reports, etc.; Also covered is the cost to contract for a Project Manager and/or Project Supervisor if contracted separately from other project contracts)			
9. Other Necessary Expenses - See Expanded Budget		$ -	0%
	TOTAL	$ 672,012.00	100%

COMMENTS

Detailed Cost Estimate Other Necessary Expense Worksheet

Project Title: Develop State and Transition Models Phase II			
DETAILED COST ESTIMATE			
1. Planning and Environmental Assessment Costs			
	Subtotal	$	-
2. FWS Consultation - Endangered Species Act	**Subtotal**	$	-
3. Direct Labor/Payroll to Perform the Project (use fully loaded labor rate)			
BLM Project Manager (GS-12, 3 pay periods w/ 5% annual increase)		$	75,159.00
Core Team BLM Resource Expert (GS-11, 3 pay periods w/ 5% annual increase)		$	56,370.00
Position 3		$	-
	Subtotal	$	131,529.00
4. Project Equipment			
	Subtotal	$	-
5. Project Materials and Supplies			
	Subtotal	$	-
6. Travel (airfare, car rental, per diem, etc)			
BLM Travel to Sites for Field Review		$	4,500.00
	Subtotal	$	4,500.00
7. Official Vehicle Use			
BLM Fleet 1 month		$	2,000.00
	Subtotal	$	2,000.00
8. Required Training for Project Implementation (list purpose)			
Training 1		$	-
	Subtotal	$	-
9. Cost of Contracts and/or Agreements to Perform Project			
NRCS Interagency Agreement		$	178,869.00
Ecological Site Descriptions		$	322,000.00
	Detailed Cost Estimate Subtotal	$	500,869.00
OTHER NECESSARY EXPENSES (APPENDIX B-11)			
10. Examples of Other Necessary Expenses (providing a breakdown of these costs is optional, however a			
ADMINISTRATION COSTS			
Budget Tracking/Accounting and Execution		$	-
Allocation of Transferred Funds to the Region and to the Field*		$	-
Preparation of OMB Reports Required in Association with Transferred Funds*		$	-
Project Procurements and Contract Oversight (If any in addition to Direct Labor for the		$	20,000.00
Preparing Transfer Requests*		$	-

Detailed Cost Estimate Other Necessary Expense Worksheet

Transfer of Station cost (PCS) for Hiring Project Personnel	$	-
Managing Allocation of Transferred Funds*	$	-
Financial Audit Support	$	-
Supervision and Oversight of SNPLMA-Funded Staff and/or Contractors	$	13,114.00
Travel Administration for Required Project Travel	$	-
Human Resource/Relations Tasks for SNPLMA-funded Personnel	$	-
Preparing Quarterly Status Reports	$	-
Tracking Project Activities, Expenses, IGOs, Task Orders (e.g., project database	$	-
IT Services to Install Hardware/Wiring, Project-Required Software, and	$	-
A percent of Project-Related Indirect Costs for Support Based on Staff Time Spent on	$	-
PROJECT CONSTRUCTION, CONSULTATION AND MANAGEMENT		
Duties of Project Manager/Supervisor (If not already included on the Estimated	$	-
Construction Trailers and Utilities	$	-
Required Project Consultations (e.g., safety and fire; cultural and historic, ADA, etc.)	$	-
Public Scoping and/or Meetings for Environmental Review, Project Design, etc. (Does	$	-
Review of Contracted Surveys, Assessments, Designs/Drawings, Reports (If not already	$	-
Construction Site Security	$	-
Cell Phones, Cell Service, Radios for Project Personnel Primarily in the Field	$	-
Required Cultural, Wildlife, Biological, and other Similar Surveys (If not already	$	-
Interest Required to be Paid on Construction Contract Retention Amounts	$	-
TEMPORARY OFFICE SPACE		
Lease Costs for New Temporary Space	$	-
Design and Installation of Modifications to Meet Space Plan Needs	$	-
Set Up Fees for Utilities (Gas, Electricity, etc.)	$	-
Furniture and Fixtures	$	-
Required Modifications to Meet Codes	$	-
Computer Equipment (See section on equipment costs for limiting conditions)	$	-
Installation Costs for Computer Networks, Telephone Service	$	-
Other (describe)	$	-
Other Necessary Expenses Subtotal	$	33,114.00
GRAND TOTAL	**$**	**672,012.00**
CASH/ IN-KIND CONTRIBUTIONS		
Contributor 1	$	-
Contributor 2	$	-
Total	**$**	**-**

MLRAs in Clark, Lincoln and White Pine Counties