

To: Members of the New Mexico State Drought Task Force

From: Impact Assessment Committee

Date: January 18, 2013

Re: Draft Impact Assessment Report

This report provides the most recent summary of impacts and current responses from New Mexico State Agencies to the drought conditions that have developed over the past 24 months. This report is broken into four sections, 1) a brief summary of the Governor's Executive Order, 2) direction from the New Mexico State Drought Task Force (NMDTF), 3) the response from the Impact Assessment Committee (IAC) including discussion of impacts by Sector and recommended actions, and 4) tables listing specific impacts and responses along with appendices.

Executive Order

On May 11, 2012, Governor Susana Martinez issued Executive Order 2012-006, Drought Declaration. This order summarized the drought conditions at that time, and declared a state of emergency statewide due to the drought conditions. The Executive Order further directed the continuation of the NMDTF and for them to meet once a quarter. It also directed the following:

- Assess the continued severity of the drought and its effects on the various sectors of the state's resources and economy.
- Make recommendations to the Governor for intermediate actions and long-term strategies to mitigate drought conditions and impacts in the state.
- Appoint such working groups as may be necessary and appropriate to examine and recommend solutions regarding the drought conditions to the task force.
- Provide information and guidance to the Governor regarding drought conditions.

The Governor also ordered the review of the New Mexico Drought Plan and to provide revisions as necessary. The Executive Order is attached as Appendix A.

New Mexico State Drought Task Force

The NMDTF has convened twice since the Governor's Executive Order. At the June 28, 2012 Drought Task Force meeting, State Engineer and Chairman Verhines directed the identification of staff from other State agencies that were knowledgeable of the impact sectors of existing New Mexico drought plans. The impact sectors identified by the NMDTF are:

- Agriculture
- Wildlife
- Wildland Fire
- Watersheds
- Drinking water
- Economics

- Tourism
- Recreation

The assigned tasks to the IAC also included a review of the current and past drought plan, determination of where these plans need to be updated, and identification of potential areas for recommendation.

The staff that has been assigned to the IAC includes the following:

Sector	Members
Agriculture	Larry Dominguez, NMDA Les Owen, NMDA Ryan Ward, NMDA
Wildlife	R. J. Kirkpatrick and staff, NMG&F
Wildland Fire and Watersheds	Tony Delfin & Susan Rich, NMEMNRD
Drinking Water	Emily Geery, NMED Rick Martinez, NMFA
Economics, Tourism, Recreation	Carlos Beserra, EDD Tourism Dpt
Other Members	David DuBois, New Mexico State Climatologist Wendy Blackwell, DHSEM Barbara Toth, NMDOH Molly Magnuson, NMOSE John Longworth, NMOSE

Impact Assessment Committee

The IAC has met, via phone conference call, 4 times since the September 20, 2012 NMDTF meeting. The committee identified the 2003 State Drought Plan as an initial starting point to review drought impacts. Each member reviewed their appropriate section and updated each impact for which they had expertise. The results of this effort are shown in the attached tables.

The development of the impact tables follows the general format relied on by the previous Drought Plans. The specific impacts were first taken from the 2003 New Mexico Drought Plan. Additionally, information from the 2002 Drought Plan was added to describe responses from the NMOSE and NMISC.

From this starting point, agency representatives located the impacts associated with their expertise. Impacts were reviewed and updated, as necessary. Once the impacts were updated, information on existing responses and or status have been provided. Additionally, the tables have information and provide details beyond impacts. There are also summaries at the end of each table for each sector to identify areas where inter agency collaborations exist.

Finally, the following sector lists provide specific recommendations for the NMDTF to consider.

Drinking Water

The initial review of impacts produced a number of items that need further refinement, especially related to public water systems. Generally, the topic areas that require additional discussion are:

1. Approve continued work with a sub group of the IAC to discuss Drinking Water Issues
2. Assess how best to implement gallon per capita per day (GPCD) metrics
3. Leak detection requirements
4. Drought Triggers for Emergency Operation Plans (EOP) and Operation and Maintenance plans
5. Checking on EOP linkage with drought monitoring metrics
6. Explore DHSEM opportunities for FEMA funding for statewide model conservation ordinance
7. Review Conservation and Drought Sections of State Water Plan
8. Work on understanding opportunities for Peak Demand Reductions, specifically in drought situations

It is recommended that a sub-committee of representatives from NMED, NMOSE, and NMDHSEM meet to further discuss the topics.

Wildland Fire and Watersheds

The activities related to wildland fire are well known amongst those in the field and have been ongoing for many years. The following recommendations are the most pressing actions known at this time.

- Ability to respond quickly to known hazards within watersheds is limited by federal requirements (NEPA etc). Understanding it's a complex issue, assess potential opportunities to improve this process.
- Expedite communication synchronization between various local, state and federal agencies
- Continue/increase support for mitigation activities that protect watersheds and communities
- Smoke management rule. Rule changes may ease open burning to assist in implementing prescribed burns and improve coordination with State/Fed interaction.
- Investigate opportunities to assist communities to prepare and respond to post-fire impacts including flooding and degraded water quality.

Agriculture

Continue with existing activities described in the table below. Note that the expired 2008 Farm Bill received a temporary 9 month extension under the “Fiscal Cliff” package, however the disaster programs, although authorized received no appropriations. Therefore agricultural producers will endure a second year without the prospect of disaster programs as a majority of the programs actually expired in 2011. Until Congress passes a new Farm Bill there are no safety net provisions for agriculture.

Water Quantity

This section includes a review of the activities associated with the Interstate Stream Commission and the Office of the State Engineer. No additional activities are recommended at this time.

Drinking Water

This section discusses impacts to Public Water Systems. Agencies involved include the New Mexico Environment Department, the New Mexico Department of Health, the New Mexico Homeland Security and Emergency Management and the New Mexico Office of the State Engineer.

Impact	Response/Current Status	Agency Or Proposed Actions
Public Water Systems		
<p>1. Many public water systems experience system failures when operating for extended periods of drought induced operation. Responses to drought emergencies have been on an ad hoc, reactive mode.</p>	<p>1. DWB identifies drought vulnerable Public Water Supply Systems (PWS) through the sanitary surveys (which are inspections)</p> <p>2. DWB works with PWS to develop their Operations and Management & Emergency Response Plans. These plans can include a possible plan of action to address drought-related problems. Water systems are supposed to monitor their wells, which should be an indicator of drought. Some PWS restrict the number of users or do not allow any new users to join due to not having enough water rights. (Drought can contribute to this issue).</p> <p>3. Construction Programs Bureau (CPB) and must make an emergency declaration in order for a PWS to receive emergency funding, which is administered by the Local Government Division of DFA.</p> <p>4. The Capacity Development Program and Source Water Protection program both continue to work with water systems that are impacted by drought to provide technical assistance and planning, help build financial, managerial and technical capacity. The DWB will require that all public water systems will be required to have an Emergency Response Plan starting in 2013 or 2014.</p> <p>5. Emergency is the last resort for public water systems when drinking water is impaired. The DHSEM has the authority to coordinate emergency water hauling operations to assist PWS when water runs out. There is a need to create a water supply emergency fact sheet for the public sector suppliers to minimize confusion for these kinds of requests.</p>	<p>1. Assess Operations and Management & Emergency Response Plans for drought related issues</p> <p>2. Create a water supply emergency fact sheet for the public sector suppliers</p> <p>3. Develop Outreach strategy to work with PWS to ensure education and support is available</p>
<p>2. Basic information on well levels, water rates, storage</p>	<p>1. No comprehensive analysis has been completed, but standard rates can be used to determine ability to pay. Addressed in PWS's</p>	<p>1. Assess Operations and Management & Emergency</p>

Impact	Response/Current Status	Agency Or Proposed Actions
capacity and delivery mechanisms are often poor.	operation and management plan.	Response Plans for drought related issues
3. Reactions to water shortages usually only feature supply options, no matter the cost.	<ol style="list-style-type: none"> 1. DWB works with water systems to assist them to create a tiered pricing structure. 2. CPB staff is able to prioritize loans related to drought. Loans associated with emergencies are expedited by staff and effectively moved as quickly as possible without breaking any programmatic policy. 3. There is a written policy and flow chart regarding CPB's role in approving emergency funding for other agencies (specifically the DFA CDBG program) and DFA also must have a written procedure for this program of which CPB's approval is just one part. 	<ol style="list-style-type: none"> 1. Review DFA's procedures to ensure essential agencies are aware of their roles
4. Responses to the drought by public water systems vary.	<ol style="list-style-type: none"> 1. No water conservation policy other than DWB requesting that water systems create a water conservation plan. 2. Case by case. 3. Meters are required for funding from Drinking Water Revolving Loan Fund. 	<ol style="list-style-type: none"> 1. Review existing programs in NMED CPB, DWB, NMOSE, and DFA. Determine how best to support each program to limit ad hoc responses.
5. Water conservation products need a push via price discounts.	<ol style="list-style-type: none"> 1. Drinking Water American Reinvestment and Recovery Act provided funding that was able to support city rebate programs for water conservation products (eg Albuquerque and Santa Fe) 2. Drinking Water State Revolving Fund provides incentives for water conservation projects(for water sense appliances) 	<ol style="list-style-type: none"> 1. Promote USEPA WaterSense activities
Water Quality		
1. Salinity Increases in LRG	<ol style="list-style-type: none"> 1. GWQB and SWQB are sampling quarterly in the Lower Rio Grande to determine and track the effects of drought. 2. Quarterly sampling was discontinued in ~2009 or so although we continue to address water quality issues and are working with the ISC to evaluate pumping/drought impact on salinity among other water quality issues 	<ol style="list-style-type: none"> 1. Continue with the LRG GW monitoring program

Impact	Response/Current Status	Agency Or Proposed Actions
	3. NMOSE and USGS working on continuous and quarterly sampling of groundwater	
2. Continue to sample on a rotational basis	<p>1. Based on a rotational schedule, NMED is intensively sampling the western half of the Canadian watershed, Valle Vidal, and the Dry Cimarron watersheds during 2006. Since we anticipate some of the streams we are monitoring in these areas may dry up, we are modifying our normal sampling plan slightly to be sure to monitor the bulk of parameters in the spring and early summer before the streams go dry</p> <p>2. Continue to sample on a rotational basis as described in our 10-year monitoring strategy and when in basins where drought impacts are acute we modify sampling plan as described above – most recently in the Rio Puerco basin in 2011 and the Sacramento Mnts in 2012 (ftp://ftp.nmenv.state.nm.us/www/swqb/MAS/Monitoring/10-YearStrategy.pdf)</p>	1. No new proposed actions
Additional Information regarding PWS		
1. Public Water Systems that had water supplies affected by drought	<p>1. UU Bar – TNC – NM350012-14 In July 2012, their well went dry and they were forced to bring in water via water buffalos from another water system that was in close proximity to them. Within two weeks the well partially recovered and they have water but are on restrictions. The water system is in the process now of drilling a new well.</p> <p>2. Village of Maxwell -C – NM35264-04 This system has six wells and only three of them are producing water. The Village is on restrictions and have received CDBG funds to rehabilitate two wells. They would like to drill a deeper well, but that is a long term plan.</p> <p>3. Maxwell Cooperative Water Users Association – C – NM35101-04 This system has three active wells and each are producing approximately 5-10 gpm. They also have instituted water restrictions. They recently spent \$27,000 to drill two new wells and each of these wells are producing 10 gpm which has helped out their situation for now.</p> <p>4. Hyde Park: During the last drought Hyde Park connected to the City of Santa Fe. They have</p>	

Impact	Response/Current Status	Agency Or Proposed Actions
	also installed a new well since then. I do not think they are currently having production issues.	
<p>2. List of water systems affected by the drought in the SE part of the state</p>	<ol style="list-style-type: none"> 1. Ruidoso: low water levels in Grindstone Reservoir before Little Bear wildfire, and now unable to divert water from Rio Ruidoso due to untreatable water quality. 2. Clovis: drilling several new wells due to significantly decreased production in current wells. 3. Portales: also needing new wells to keep up with normal demand. 4. Elida: current wells decreasing in production and As showing up as contaminant. New well planned. 5. Desert Ranch: East well dry. Remaining well increasing in nitrate levels. 6. Moriarty: needing new sources to maintain normal production. 7. Turquoise Estates, Longhorn Estates, Clovis West: increasing nitrate levels. 8. Cannon AFB: they are experiencing a slight increase in contaminant levels at this point. 9. Cloudcroft: they are working on toilet to tap technology to avert a water shortage. 10. Ruidoso Downs: added new well to keep up with normal demand. 11. We can realistically include all water systems on the Ogalalla aquifer. They are experiencing dropping water levels, forcing deeper wells to hit bottom of water bearing strata and as a general statement they see increases in contaminant levels. Some may hit the MCL before long. 	

Impact	Response/Current Status	Agency Or Proposed Actions
Public Health Impacts to Drinking Water		
<p>1. Nitrate levels and other water borne hazards are increased due to stresses on PWS infrastructure resulting from prolonged drought</p>	<p>1. Continue to cooperate with partners to monitor for symptoms associated with ...</p> <p>2. Continue to implement Joint agreements with partners to provide public alerts when boil water advisories are issues</p> <p>3. Department of Health to assist with this section</p>	

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WILDFIRE		
<p>1. <i>Monitoring and Assessing Fire Danger Conditions.</i> Drought increases wildland fire danger to extreme conditions for an extended period of time. The fire season, which used to run from May 1 to July 15th, starts earlier and lasts longer. NM is now seeing higher elevation spruce-fir forests burn at the height of fire season with an unprecedented intensity beyond fire suppression capabilities. Agencies responsible for wildland fire management need fire danger and climate data to plan actions.</p>	<p>1. Wildland Fire</p> <ul style="list-style-type: none"> a) Monitor fire danger conditions in the field. b) Coordinate collection and analysis of fire season data at the Southwest Coordination Center (SWCC). SWCC will assure data quality through testing and calibration of Remote Automated Weather Stations (RAWS). New stations at Pendaries and Cimarron installed and tested c) Utilize the Energy Release Component (ERC) chart published by the SWCC to monitor and compare fire danger potential by year. Disseminate fire season data through the SWCC website. d) In assessing fire danger conditions, assume “normal” winter/spring precipitation will not alleviate all the effects of the 2011-2012 drought. Assume a drought similar to 2011-2012 would have a multiplied effect. Expect and plan for an earlier, longer and more intense fire season. 	<p>Federal land Management agencies responsible for wildland fire management; Southwest Coordinating Group (Comprised of State FMOs from NM & AZ + 7 fed agencies: USFS, BLM, BIA (SW, Navajo & West), USFWS, NPS); NM–EMNRD Forestry Division.</p>
<p>2. <i>Fire Management Activities</i></p> <p>Increased fire danger results in more fires and more acres burned. Wildland fires are more intense and spread more rapidly. Wildland fires are larger and harder to control. The threat to firefighter and public safety increases.</p> <p>NM has begun experiencing unprecedented fires that threaten multiple communities on a year-</p>	<p>1. Fire Prevention</p> <ul style="list-style-type: none"> a) Conduct aggressive fire prevention media campaign to reduce the number of careless or negligent human-caused fires. Educate the public through media, signage, patrols and law enforcement. b) Federal and state agencies and local governments implement fire restrictions and closures as fire danger increases. In severe drought years, anticipate extended and extensive closures of federal lands. Closures could also affect State Parks and State Game and Fish lands. Work with federal land management agencies to focus closures to minimize impact to rural economies. 	

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<p>round basis. Fire danger in all forest types is exacerbated by drought-related insect damage.</p> <p>There is higher potential for multiple structures to be damaged or destroyed and higher likelihood that numerous citizens could be affected by evacuations that last more than three days, and/or by post-fire flood impacts.</p> <p>Fire suppression costs could reach record levels in severe drought years. Lack of fire suppression resources will result in no action on large fires burning in remote areas.</p>	<ul style="list-style-type: none"> c) Utilize law enforcement to encourage responsible stewardship by citizens. Utilize a multi-agency task force approach to investigate difficult or persistent incidents. d) Implement local government ordinances requiring defensible space in new developments and new construction standards. See NM Fire Planning Task Force recommendations for adopting International Wildland-Urban Interface Code <p>2. Fire Pre-Suppression</p> <ul style="list-style-type: none"> a) Conduct fire pre-suppression activities to promote wildland fire training, equipment and agency commitment. Provide wildland firefighter and fire department training to promote national wildland fire qualification standards. b) Provide state and federal grants to fire departments to improve wildland fire equipment and organization. c) Develop Resource Mobilization Plan agreements between EMNRD and local governments to provide statewide mobilization of qualified structural firefighting resources for wildland/urban interface fires. NM has increased the amount and quality of equipment provided by RMP participants as well as increased capacity. Municipal and county JPAs all updated. d) Utilize federal funds to increase local fire department capacity by offering wildland fire training on weekends and after hours. <p>3. Suppression</p> <ul style="list-style-type: none"> a) Prioritize firefighter and public safety for all fire suppression operations. Initial attack fires aggressively but provide for safety first. 	

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	<ul style="list-style-type: none"> b) Continue to develop Type III organizations for each Interagency Zone Dispatch area to support initial attack efforts. 	
<p><i>3. Fires that Threaten Communities</i></p> <p>Increased fire danger increases the probability of large forest stand replacement fires that can catastrophically affect watersheds and threaten communities. Public safety is threatened. Property and natural resource loss can be severe.</p>	<ul style="list-style-type: none"> 1. Prioritize Fire Incidents: Follow the prioritization process established by the Interagency Southwest Coordination Group. <ul style="list-style-type: none"> a) Control all new fire starts. Keep fires small. Initial attack fires get first priority. b) Prioritize fire incidents that threaten communities where public safety and property are threatened. Give priority to watersheds that directly serve community water systems. c) Consider fires in remote locales a lower priority. 2. Coordinate Evacuations: EMNRD will coordinate requests for non-fire related state resources. EMNRD will coordinate requests for state resources through the DHSEM. Coordinate evacuation operations with the wildland fire Incident Management Teams. 3. Fuels Reduction Treatments: Implement the New Mexico Fire Plan and National Cohesive Wildland Fire Strategy to prioritize fuels reduction and defensible space work in communities most at risk from catastrophic wildland fires. Recognize that making communities safer is a long term project that can only be accomplished through partnerships with federal and state agencies and local governments working with citizens in their backyards, with communities in the wildland/urban interface and with the resource agencies in fire-prone lands. Community leadership is 	<p>EMNRD Forestry Division, DPS, DHSEM, federal land management agencies</p>

Impact	Response/Current Status	Agency Or Proposed Actions
	<p>very important. Projects should be designed collaboratively.</p> <ol style="list-style-type: none"> 4. Monitoring: Agencies should monitor and evaluate fuel treatment projects and transmit lessons learned to land managers. Coordinate with research institutes and organizations working on monitoring and disseminating information. 5. EMNRD Forestry Division will host the New Mexico Fire Planning Task Force (NMFPTF). The NMFPTF will review priority communities at risk, develop model ordinances and building codes, and provide recommendations to the Governor by December 15th each year. 6. Conservation Easements to Reduce Development in Forest Lands: Continue to implement the Forest Legacy and Land Conservation Incentives program through EMNRD Forestry Division to purchase conservation easements to reduce development in high-risk communities threatened by development. 	
<p>4. Forest and Watershed Health</p> <p>Drought can affect forest health by increasing susceptibility to insects and disease and destructive wildfires. Large stands of insect mortality that have occurred across the state greatly increase the risk of negative impacts on New Mexico's watersheds including higher fire danger.</p> <p>In wetter years, trees will regain some live fuel</p>	<ol style="list-style-type: none"> 1. Implement actions to improve forest and watershed health outlined in the New Mexico Forest and Watershed Health Plan and the New Mexico Statewide Natural Resources Assessment and Strategy and Response Plans. 2. Recognize wildland fires are a natural process. Consider fire use and prescribed fire to reintroduce a normal fire occurrence cycle into the ecosystem, under appropriate conditions. Prescribed fire is a controversial issue. Mitigate by training prescribed fire practitioners. Agencies have completed an update of procedures to be used in coordinating prescribed fire activities, especially at high fire danger levels. 3. Conduct mid-summer and late fall aerial 	

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<p>moisture and be less prone to crown fires. Trees will also increase in vigor and ability to withstand insect attacks.</p> <p>In drought years, anticipate increased mortality due to insect and disease epidemics. Expect community protection and restoration projects will be halted due to high fire danger. Tree seedling sales will be reduced due to concerns about water availability.</p> <p>Public agency costs for wildland fire suppression and burned area rehabilitation can be very high. Prohibitive costs to replace infrastructure and rehabilitate burned areas can result in additional downstream impacts.</p> <p>Watersheds throughout the state are susceptible to damage by catastrophic fire and insect and disease infestations because forests are in an unhealthy condition. Elaborate review and implementation processes and procedures that slow down forest and watershed restoration projects on National</p>	<p>and ground surveys to identify location and extent of insect and disease outbreaks. Coordinate multiagency effort through the US Forest Service Southwest Region's Forest Health Program.</p> <ol style="list-style-type: none"> 4. Provide forest insect and disease management information to private landowners on www.nmforestry.com and through other venues. 5. Monitor policy and legislation that could potentially affect forest and watershed health in New Mexico. Review impacts and implementation of federal laws such as the Endangered Species Act and the National Environmental Planning Act. Work with State Forest and Watershed Health Coordinating Group and organizations such as WGA, CWSF, and NASF to promote sound policy and streamlined review and implementation processes. 6. Design projects at the community level to gain public support for local forest restoration projects. Utilize the Community Restoration Act to promote community-based projects. Design cross-jurisdictional projects collaboratively with state, local, tribal and federal partners. 7. Promote biomass utilization and small diameter forest product industries to reduce the cost of treatments and strengthen the economies of rural forest-based communities. 	

Impact	Response/Current Status	Agency Or Proposed Actions
Forest lands exacerbate the situation.		
<p data-bbox="186 344 456 443"><i>5. Threatened and Endangered Plant Species</i></p> <p data-bbox="186 485 488 1335">Many endangered plants respond to drought conditions through reduced reproductive and survival rates and increased mortality rates. Drought can exacerbate herbivory on endangered plants, including livestock grazing, browsing, rodent and insect predation by forcing animals to eat plants that they may otherwise avoid. During drought years, animals may also concentrate in sensitive areas that support endangered plants, such as wetlands, increasing the amount of trampling, predation and erosion.</p>	<p data-bbox="516 344 1068 443">Monitor populations of rare plants to assess threats and take actions when drought related impacts are identified.</p> <ol data-bbox="565 453 1127 1052" style="list-style-type: none"> <li data-bbox="565 453 1127 552">1. Examine alternatives for reducing livestock use in sensitive habitats during periods of drought. <li data-bbox="565 562 1127 661">2. Consider fencing vulnerable populations of endangered plants in sensitive areas such as wetlands. <li data-bbox="565 672 1127 770">3. If necessary, provide rodent trapping in the most vulnerable populations of endangered plants. <li data-bbox="565 781 1127 879">4. Regularly collect seeds of endangered plants for reintroductions or ex-situ conservation programs. <li data-bbox="565 890 1127 1052">5. Work with state and federal fire agencies to increase awareness of endangered plant habitats to minimize or avoid impacts of fire management activities on endangered species. 	
<p data-bbox="186 1373 440 1440"><i>6. Forest Health Air Quality Issues</i></p>	<ol data-bbox="516 1373 1127 1862" style="list-style-type: none"> <li data-bbox="516 1373 1127 1549">1. Smoke Management Program Rules were adopted and became effective 12/31/03. BLM staffs the Smoke Management Specialist position which is housed in the Air Quality Bureau. <li data-bbox="516 1560 1127 1833">2. The Air Quality Bureau coordinates with the burners (including federal land managers) and the Department of Health to ensure the public is notified regarding the potential impacts from smoke from wildfires. In addition, the AQB has required that a prescribed burn not be implemented when the area was already experiencing a significant impact from smoke. <li data-bbox="516 1843 1127 1862">3. NMEMNRD to work with New Mexico 	AQB/NMED

Impact	Response/Current Status	Agency Or Proposed Actions
	<p>Environment Department, Air Quality Bureau to update Smoke Management Program Rules (SMPR). The US Forest Service and BLM will coordinate SMPR by providing Smoke Management Specialists stationed at NM-ED-AQB</p>	

Impact	Response/Current Status	Agency Or Proposed Actions
DROUGHT IMPACTS -- AGRICULTURE		
<p>1. Economic - Crop</p> <ul style="list-style-type: none"> a) Loss of production b) Farmland left fallow due to lack of water. c) Decreased yields. d) Increased cost of production for pumping ground water in areas where surface water is short. e) Costs associated with deepening wells due to lowering of water table. <p>2. Economic – Livestock</p> <ul style="list-style-type: none"> a) Loss of Production b) Decrease in cattle numbers due to lack of grass production. c) Lower weaning weights. d) Decreased conception rates leading to poor calf crops. e) Increased cost of production due to heavy supplemental feeding (compounded by high commodity and hay prices). f) Increase in production costs 	<p>1. The New Mexico Department of Agriculture (NMDA) collaborates with U.S. Department of Agriculture’s (USDA) Farm Service Agency on the drought declaration process.</p> <ul style="list-style-type: none"> a) USDA disaster declaration automatically triggers for counties in the US Drought Monitor level of D2 for 8 consecutive weeks or any time under D3 or D4. The Governor can also initiate a disaster request. b) NMDA communicates among stakeholders declaration status, governor’s executive orders, program information and resources available. c) The expired 2008 Farm Bill received a temporary 9 month extension under the “Fiscal Cliff” package, however the disaster programs, although authorized received no appropriations. Therefore agricultural producers will endure a second year without the prospect of disaster programs as a majority of the programs actually expired in 2011. Until Congress passes a new Farm Bill there are no safety net provisions for agriculture. d) Program for emergency grazing on CRP acreage in Curry and Quay counties. Various stipulations apply. <p>2. Private sector insurance coverage is available for some areas of production. Policies are not available for all commodities; areas of the state; can be costly; have some systematic flaws in uniformly covering losses.</p> <ul style="list-style-type: none"> a) NMDA and NMSU evaluated a pilot forage insurance program designed to manage risks associated with forage loss due to drought. Information was provided to producers to help them make informed decisions about the program. <p>3. NMSU/CES workshops to inform producers about tax implications due to liquidation/culling and pasture management/recovery after drought. NMDA</p>	<p>USDA/FSA, NMDA, NMSU/CES , agricultural organizations</p>

Impact	Response/Current Status	Agency Or Proposed Actions
<p>due to water hauling costs.</p> <p>g) Tax liabilities from herd liquidations.</p> <p>h) Decreased tax roles for counties.</p> <p>3. Economic - Dairy</p> <p>a) Added national drought caused commodity and hay prices to escalate.</p> <p>b) Cost of milk production increased drastically.</p> <p>c) Increased freight costs due to sourcing feed from further distances.</p>	<p>works in conjunction to disseminate information.</p> <p>4. NMDA collaborates with agricultural organizations to locate sources of hay. During emergency situations (fire) dependence is placed on donated hay as the state anti-donation clause precludes the use of state funds for hay purchases.</p> <p>5. IRS has provided options for tax deferrals from herd liquidations if certain stipulations are followed.</p>	
<p>4. Management - Crop</p> <p>a) Changes in crop rotation patterns.</p> <p>b) Movement to less water consumptive crops.</p> <p>c) Soil salinity problems associated with decreased surface water availability.</p> <p>5. Management – Livestock</p> <p>a) Drought must be incorporated into range</p>	<p>1. Agricultural sector (crop and livestock producers) will be kept informed of current and long-range climatic conditions in order to facilitate farm/ranch management plans. Tools used for monitoring include:</p> <p>2. U.S. Drought Monitor -- input provided to supplement limited climatic data and/or unique situations.</p> <p>3. USDA – National Agricultural Statistics Service New Mexico Weekly Crop and Weather bulletin, reports the following: county comments, status of crop production, livestock, soil moisture and range/pasture conditions, and precipitation statewide.</p> <p>4. Departure from Average Normalized Difference Vegetation Index (NDVI). The NDVI is a measure of photosynthetic activity on the earth’s surface calculated using infrared and near-infrared data from</p>	NMDA

Impact	Response/Current Status	Agency Or Proposed Actions
<p>management plans.</p> <p>b) Reduced forage production increases need for range improvements to improve livestock distribution.</p> <p>6. Management - Dairy</p> <p>a) Reformulation of feed rations using cheaper sources has resulted in decreased milk production.</p>	<p>satellite sensors. The departure from average index is the deviation from average for a specific time period.</p> <p>5. VegDRI (http://vegdiri.unl.edu/Home.aspx). VegDRI maps provide regional to sub-county scale information about drought's effects on vegetation. The VegDRI calculations integrate satellite-based observations of vegetation conditions, climate data, and other biophysical information such as land cover/land use type, soil characteristics, and ecological setting.</p> <p>6. NMDA provides technical assistance in developing range management plans. Including communication, consultation and cooperation between state, federal and industry organizations to develop monitoring and mitigation strategies prior to grazing on federal land.</p>	
<p>7. Natural Resources</p> <p>a) Decreased forage production.</p> <p>b) Increased erosion from wind and water.</p> <p>c) Increased fire frequency, intensity, and severity.</p> <p>d) Burn scars are slow to recover without adequate precipitation.</p> <p>e) Increased likelihood of watershed health problems.</p> <p>f) Increased potential of invasive species establishment.</p>	<p>1. Soil and Water Conservation Districts coordinate assistance from all available sources - public and private, local, state and federal - in an effort to develop locally-driven solutions to local natural resource concerns.</p> <p>2. Cooperative Weed Management Areas are a partnership of federal, state, and local government agencies, tribes, individuals, and various interested groups cooperating to manage noxious weeds or invasive plants in their area.</p> <p>3. NMDA coordinates ESF-11 activities in the state when initiated by the Emergency Operations Center (EOC). NMDA may initiate response activities under a department Emergency Response Plan under situations separate from or in conjunction with ESF-11 activities.</p> <p>4. NMDA worked with county emergency responders to develop an agricultural component into the County EOP</p>	<p>NMDA, SWCDs, NMLB</p>

Water Quantity

Impact	Response	
Canadian River Basin		
1. Canadian River Compact and Decree in Oklahoma and Texas v. New Mexico (Ute Dam & Reservoir) <ul style="list-style-type: none"> a. Drought will not inhibit ability of New Mexico to exercise its rights to store Canadian Basin waters 	1. No response identified	
Colorado River Basin		
1. <i>Colorado River Compact</i> <ul style="list-style-type: none"> a. Drought will have significant effect on San Juan. b. Water for Endangered Species will compete with tribal, federal, and state uses. c. Shortages may impact deliveries of San Juan Chama water to cities and irrigation districts in Rio Grande Basin 	1. Assess if Navajo Reservoir will drop below intake for Navajo Indian Irrigation Project	
2. <i>Lower Colorado River Basin Court Decrees</i> <ul style="list-style-type: none"> a. 1964 Supreme Court decree in Arizona v. California set forth New Mexico's water rights for Gila River basin in New Mexico (San Simon Creek, San Francisco River, Gila River, and all tributaries and related ground water sources) <ul style="list-style-type: none"> i. In expected drought situations, New Mexico water users will be limited in proportion to reduced Gila River Basin flows 	1. No response identified	
3. <i>Upper Colorado River Basin Compact</i>	1. No response identified	
4. <i>La Plata River Compact</i> <ul style="list-style-type: none"> a. Drought will severely impact availability of water for New Mexico users in proportion to reduction in La Plata flows 	1. No response identified	
5. <i>Animas La Plata Project Compact</i>	1. No response identified	
6. <i>Operating Plan for Colorado River Reservoirs</i>	1. No response identified	
7. <i>Colorado River Salinity</i>	1. No response identified	
8. <i>Title II, Public Law 93-320, Amended:</i> <ul style="list-style-type: none"> a. Drought will negatively impact States' ability to achieve desired salinity levels 	1. No response identified	

9. <i>Interim Surplus Guidelines</i>	1. No response identified	
10. <i>Colorado River Delta</i>	1. No response identified	
11. <i>New Mexico's 18,000 Acre-Foot Gila River Allocation:</i> a. Likelihood of consumptive use in New Mexico without injury to downstream users negatively impacted by drought or reduced stream flows in the basin	1. No response identified	
Pecos River Basin		
1. <i>Pecos River Compact</i> a. Ability of New Mexico to deliver required percentage negatively impacted by drought conditions b. Continue to monitor the ESA flow requirements for the Pecos Bluntnose Shiner	1. ISC, via the Pecos Settlement, is pumping retired sr. groundwater rights to augment CID supply.	1. Begin assessment of next steps to secure water for ESA needs.
Rio Grande Basin		
1. <i>Amended Costilla Creek Compact</i> a. Drought will impair water supplies available to users in both states	1. Continue with water master administration in New Mexico to ensure compliance with Compact delivery requirements	
2. <i>Rio Grande Compact</i> a. San Juan-Chama Project i. Drought will reduce quantity of San Juan-Chama Project water available to New Mexico water users b. Above Otowi Gage on Rio Grande, New Mexico required to restrict depletions of water to the amount depleted in 1929 i. Drought will not impact New Mexico's ability to meet that restriction c. Below Otowi Gage, in the Middle Rio Grande, New Mexico required to deliver over 50% of flow measured at Otowi Gage to below Elephant Butte Reservoir i. New Mexico must absorb any transmission or evaporative losses	1. Assess monitoring effort to identify SJC project allocation triggers 2. Monitor credits, determine if there is a risk of having a cumulative compact credit in excess of allowable negative departure 3. Continue to support pilot channel maintenance to assist in delivery of compact credit	1. Continue with the alternative administration in the Rio Chama 2. Develop understanding of best local water sources available to augment river for ESA purposes in the middle valley.

<ul style="list-style-type: none"> ii. Drought will have major impact on State's ability to meet requirement iii. Failure of Bureau of Reclamation to maintain historic and efficient conveyances such as Middle Rio Grande Low Flow Channel and Elephant Butte Pilot Channel will drastically increase losses iv. Increases in endangered species and non-native habitat have increased depletions that New Mexico must accommodate d. Below Elephant Butte, in the Lower Rio Grande, New Mexico must deliver to Texas approximately 42% of the Project Water stored in Elephant Butte <ul style="list-style-type: none"> i. Drought impacts will be severe ii. Groundwater pumping to offset reductions in River water will impair river flows and perhaps New Mexico's ability to make deliveries to Texas 	<p>water</p> <p>4. Continue to engage with ESA process, implement Silvery minnow Recovery Implementation Plan</p>	
Statewide		
<ul style="list-style-type: none"> 1. Acequias <ul style="list-style-type: none"> a. Drought will impair supply of water to acequias 		
<ul style="list-style-type: none"> 2. Non-stream connected groundwater <ul style="list-style-type: none"> a. Drought will accelerate groundwater mining 		

APPENDIX A

Executive Order 2012-006, Drought Declaration