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NRD Profile

Lower Republican Natural Resources District

Quad Counties
Multi-Jurisdictional Hazard Mitigation Plan Update

2021

Local Planning Team

Table LRNRD.1: Lower Republican NRD Local Planning Team

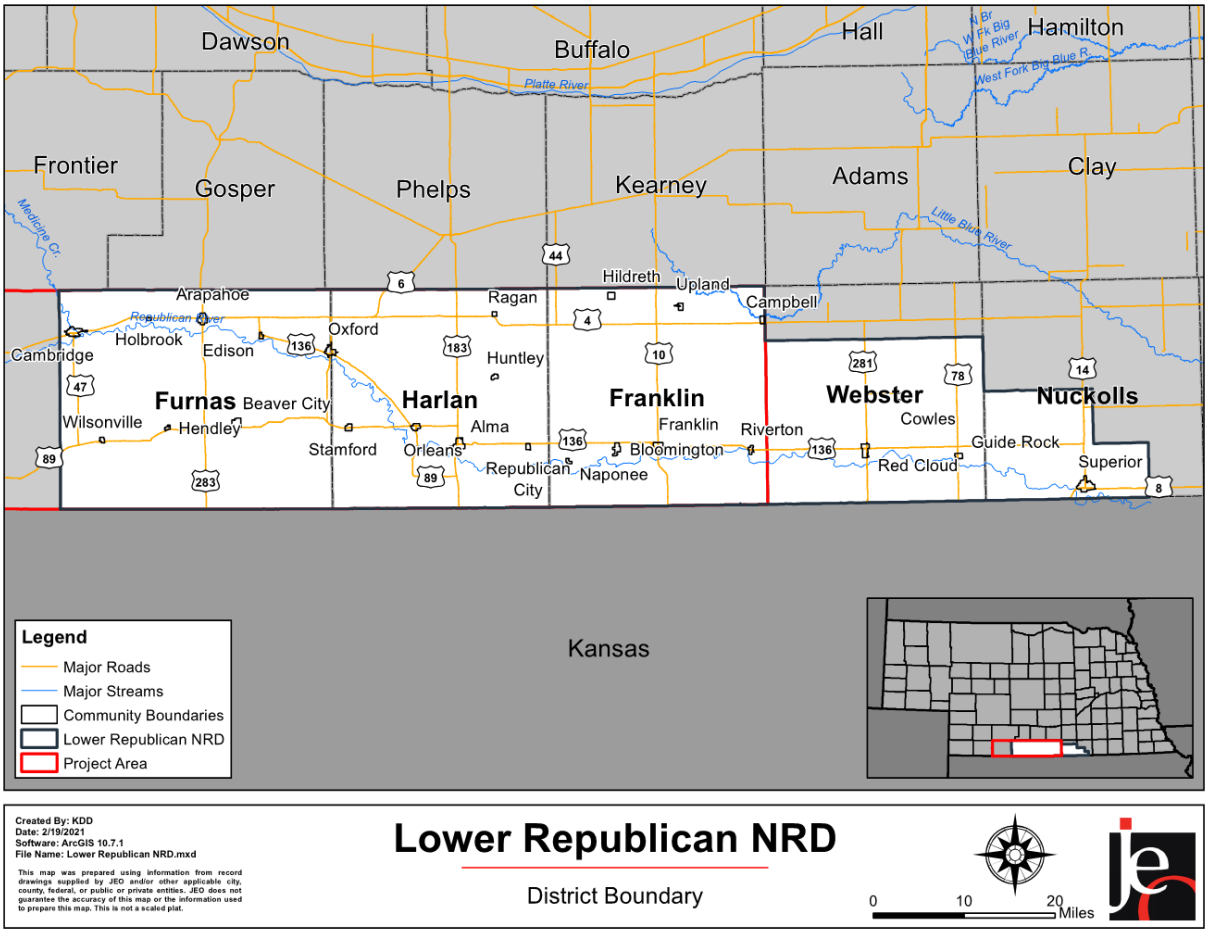
Name	Title	Jurisdiction
Todd Siel	General Manager	Lower Republican NRD
Dave Bantam	Water Resources technician	Lower Republican NRD

Location and Geography

The Lower Republican Natural Resources District (NRD) is located in south-central Nebraska and is comprised of Franklin, Furnas, Harlan, part of Webster, and part of Nuckolls Counties. Major waterways in the area include the Republican River and the Harlan County Reservoir. The Lower Republican NRD topographic regions include valleys and plains with a vast majority of the NRD land being dissected plains.[1] Altogether, the NRD covers an area of 2,824 square miles.

The Lower Republican NRD also owns and operates the Lower Republican NRD Rural Water Project. It supplies 91 homes and the Village of Guide Rock with drinking water from the City of Franklin. The rural water project includes 117 miles of pipeline, a 100,000-gallon storage facility, a pump station, and two pressure reducing valves.

Figure LRNRD.1: Lower Republican Natural Resources District



1 Center for Applied Rural Innovation. "Topographic Regions Map of Nebraska." 2001. http://digitalcommons.unl.edu/caripubs/62.

Transportation

The Lower Republican NRD's major transportation corridors include US Highways 6, 136, 183, 281, and 283 and State Highways 4, 8, 10, 14, 44, 47, 78, 88, and 89. The most traveled route is US Highway 6 with an average of 4,840 vehicles daily, 425 of which are trucks.[2] The major railroads which travel through the NRD include Amtrak, Burlington Northern Santa Fe Railway, and Nebraska Kansas Colorado Railway. US Highways 183 and 281 are of most concern as they regularly carry fertilizers, pesticides, fungicides, and fuel. No major chemical spills have occurred within the district. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community, as well as areas more at risk of transportation incidents.

Demographics

It is estimated that the Lower Republican NRD serves a population of about 14,500 people over five counties.[3] However, the NRD does not collect the demographic information of their population, nor does the U.S. Census Bureau recognize the NRD as a distinct unit. As a result, there is no population data generated specifically for the NRD. For information regarding population data, please refer to a specific jurisdiction's community profile or to *Section Three: Demographics and Asset Inventory.*

Future Development Trends

Over the past five years, the Harlan County Reservoir floodgates have been rebuilt and automated irrigation canal gates were added to the Frenchman Cambridge Irrigation District and Nebraska Bostwick Irrigation District. In the next five years, the district plans on conducting flood prevention work on the Thompson Creek watershed and West Turkey Creek watershed through grant funding from the Watershed and Flood Prevention Operations program (WFPO). Additional water hookups are also planned for the district's Rural Water Project.

Community Lifelines

Critical Facilities

Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public, and essential for returning the jurisdiction's functions to normal during and after a disaster per the FEMA Community Lifelines guidance. Critical facilities were identified during the original planning process and updated by the local planning team as part of this plan update. The following table and figure provide a summary of the critical facilities for the NRD. Although not mapped, the NRD also indicated that the 117 miles of water pipe for the Rural Water Project is critical infrastructure.

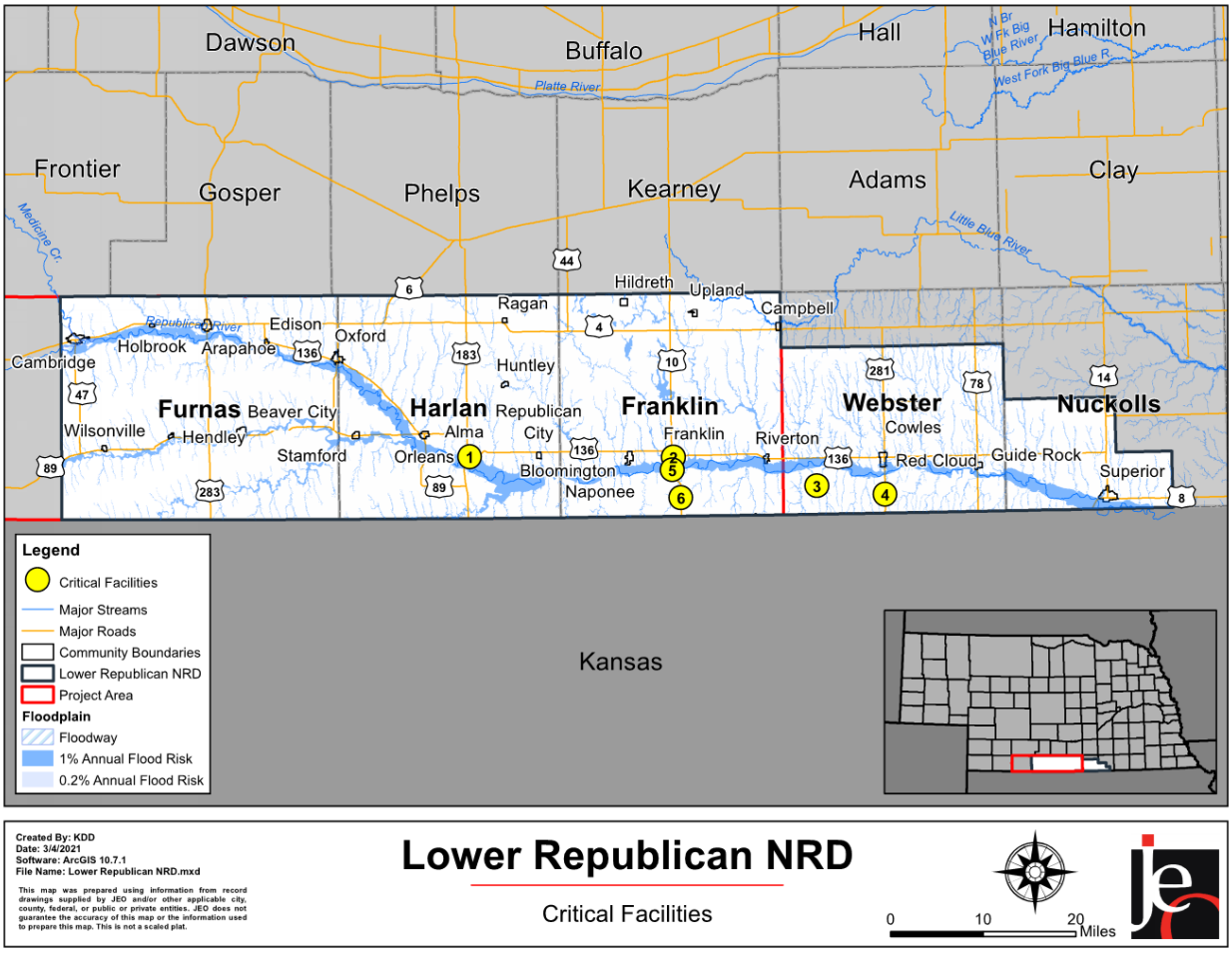
Table LRNRD.2: Critical Facilities

CF Number	Name	Community Shelter (Y/N)	Generator (Y/N)	Floodplain (Y/N)
1	LRNRD Office	N	N	N
2	Rural Water Shop Building	N	N	N
3	Pressure Reducing Vault #1	N	N	N
4	Pressure Reducing Vault #2	N	N	N
5	Rural Water Pump House	N	Y	Y
6	Water Tower	N	N	N

2 Nebraska Department of Roads. 2018. "Interactive Statewide Traffic Counts Map." [map]. https://gis.ne.gov/portal/apps/webappviewer/index.html?id=bb00781d6653474d945d51f49e1e7c34.

3 United States Census Bureau. 2018. "DP05: Demographic and Housing Estimates [database file]. https://data.census.gov/cedsci/.

Figure LRNRD.2: Critical Facilities



Historical Occurrences

For historical hazard occurrences in Franklin, Furnas, and Harlan Counties, please refer to their profiles in this plan. Historical occurrences information for Nuckolls and Webster Counties can be found in the *Lower Big Blue NRD and Little Blue NRD Hazard Mitigation Plan*.

The following table provides a summary of hazards that have affected or have the potential to affect the Lower Republican NRD. The district was evaluated for previous hazard occurrence and the probability of future hazard events on each of the 13 hazards profiled in this plan. The evaluation process was based on data collected; previous impacts or the potential for impacts to infrastructure, critical facilities, people, and the economy; and the proximity to certain hazards such as dams and levees. For example, while there have not been instances of levee failure in the district, there exists a possibility for a levee to fail in the future due to the presence of levees in the district.

Table LRNRD.3: Lower Republican NRD Hazard Matrix

Hazard	Lower Republican Natural Resources District
Animal and Plant Disease	X
Chemical Spills	X
Dam Failure	X
Drought	X
Earthquake	X
Extreme Heat	X
Flooding	X
Grass/Wildfires	X
Levee Failure	X
Severe Thunderstorms	X
Severe Winter Storms	X
Terrorism	X
Tornadoes and High Winds	X

Hazard Prioritization

The hazards discussed in detail below were either identified in the previous HMP and determined to still be of top concern or were selected by the local planning team from the regional list as relevant hazards for the district. The planning team prioritized the selected hazards based on historical hazard occurrences, potential impacts, and the district's capabilities. For more information regarding regional hazards, please see *Section Four: Risk Assessment*.

Chemical Spills

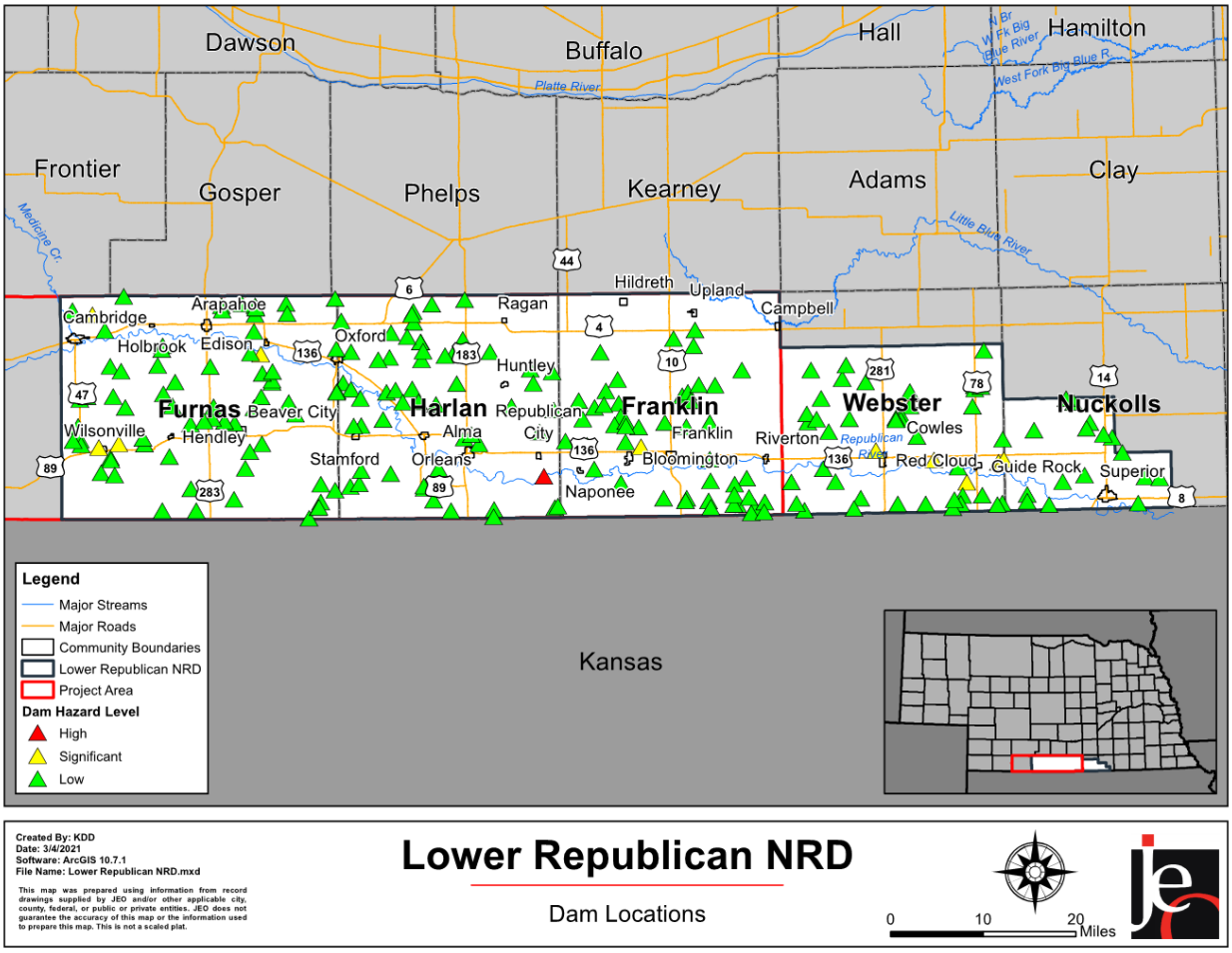
Many businesses house chemicals within the NRD. In addition, heavy semi-truck traffic carries chemicals to and from these businesses. Most of the chemicals in the district are agriculturally related or bulk fuel. The NRD is primarily concerned with contamination of surface and ground water from a chemical spill. No major spills have contaminated surface or ground water in the past. To reduce potential spills the NRD issues chemigation permits, provides chemigation training classes, and performs chemigation inspections. Inspections include checking safety equipment like check valves, injection valves, failsafe devices, and certified applicator's permit. Without an inspection and permit, irrigators cannot perform chemigation.

Dam Failure

One high hazard dam is located in the district. The figure below shows the location of the Harlan County Dam as well as all other dams within the district. The U.S Army Corps of Engineers owns and operates the dam and the NRD conducts water sampling and testing. Floodgates on the dam were rebuilt two years ago. No dam failures have occurred in the district. Dam inundation maps are not shown due to security reasons, but a failure of the Harlan County dam would likely cause flooding downstream for 50 miles.

Currently, the NRD owns three dams for flood control. Those dams are the Stamford 2-A, Stamford 3-A, and Elm Creek 21-B.

Figure LRNRD.3: Dam Locations



Drought

Primary concerns related to drought include crop failure, community water shortages, and livestock impacts. From 2016 to 2019 the NRD experienced a drought that caused dry pastures and livestock issues. There were no issues with the Rural Water Project as the wells are deep enough to survive most drought events. The NRD issues well permitting of any well over 50 gallons a minute and is able to implement water restrictions if needed. The Republican River Compact is mainly what drives any water restrictions. The Republican River Compact apportioned the basin's water supply among the states of Nebraska, Colorado, and Kansas and allocated those supplies based on anticipated development. The purpose of the compact was to provide an equitable division of water in order to remove controversy and provide for an efficient use of waters in the Republican River basin.

Flooding

The March 2019 floods caused low land farm flooding, crop loss, damaged culverts, damaged bridges, erosion of fields, and damaged irrigation systems. In addition, Highway 183 near the Harlan County Reservoir was almost closed due to high water levels. There was no damage to NRD property. The Rural Water Project had minor erosion around some pipes but no damage. The local planning team indicated that widespread flooding occurs around every 10 years with impacts similar to 2019. All tributaries in the Republican River Basin are at risk of flooding,

however the Harlan County Reservoir has a lot of floodwater storage potential which helps reduce the impacts.

In addition to the three flood control dams, the NRD also administers funds for a private group of landowners called the Melrose Project. The Melrose Project is a group of landowners that contributes private funds to maintain conveyance of a small stream that crosses a poorly drained portion of agricultural land along the Republican River floodplain. The NRD administers the funds and maintains the stream for water conveyance as needed.

The planned Thompson Creek Watershed Project and West Turkey Creek Watershed Projects will increase water storage to help stay in compliance with the Republican River Compact. They will also help with flood control, with the Thompson Creek Project reducing flooding in the Village of Riverton.

Severe Thunderstorms

Severe thunderstorms are a common occurrence across the NRD. There has been no past damage to NRD property from severe thunderstorms. However, past storms have caused crop damage, roof damage, and started wildfires in other areas of the district. The rural water pump house is the only building with a backup generator. However, power outages are typically short lived and do not cause many issues for the NRD. Vital records are backed up through offsite cloud storage and paper copies are also kept.

Tornadoes and High Winds

The primary concern with tornadoes and high winds is property and crop damage. On Father's Day in 2014, a large windstorm damaged structures, trees, powerlines, and crops across the NRD. NRD property was not damaged and has not been damaged from these events in the past. All incorporated communities have alert sirens and there are safe rooms and storm shelters located around Harlan County Reservoir, schools, and courthouses. There are no shelter locations within the NRD-owned buildings.

Governance

The NRD is governed by a group of 11 elected Board of Directors and entrusted with a broad range of responsibilities to protect and enhance Nebraska's many natural resources. The NRD serves both incorporated and unincorporated areas within their district and has the capability to financially and administratively assist villages, cities, and counties with mitigation actions (most commonly flood control and drainage improvements). The following positions may help implement mitigation projects:

- General Manager
- Assistant General Manager
- Administrative Assistant
- Water Resources Administrator
- I & E Coordinator/Water Resources Secretary/Rural Water Secretary
- Water Resources Technicians

Capability Assessment

The NRD has the authority to levy taxes for specific purposes and to issue general obligation bonds to finance certain projects. It is primarily funded by a portion of the property tax assessment. The NRD also regularly engages in public education and information programs related to hazard mitigation in the area, and routinely works with other counties, cities, and villages within their

jurisdictional boundaries. It also provides funds for cost-share assistance to help encourage the proper decommissioning of water wells. Nearly 50% of the total budget goes to erosion control, 15% to recreation and wildlife, 10% to flood control, 10% to water quality, 5% to water supply, 5% to general administration, and 5% to information and education.

The capability assessment consisted of a review of existing policies, regulations, plans, and programs with hazard mitigation capabilities. The following tables summarize the NRD's planning and regulatory capability; administrative and technical capability; fiscal capability; educational and outreach capability; and overall capability to implement mitigation projects.

Table LRNRD.4: Overall Capability

Overall Capability	Limited/Moderate/High
Financial resources to implement mitigation projects	Moderate
Staff/expertise to implement projects	Limited
Public support to implement projects	High
Time to devote to hazard mitigation	Limited

Plan Integration

The NRD has several planning documents that relate to hazard mitigation and are discussed below. No other plans were identified during this process. The district will seek out and evaluate any opportunities to integrate the results of the current HMP into other planning mechanisms and updates.

Chemigation Rules and Regulations (2015)

This document outlines the requirements for irrigators when obtaining a chemigation permit. It also discusses the inspection requirements prior to performing any chemigation.

Ground Water Management Rules and Regulations (2018)

The Ground Water Management Rules and Regulations were created to protect groundwater quantity, prevent or resolve conflicts between users of hydrologically connected groundwater and surface water, and implement controls to carry out the goals of the Integrated Management Plan. It does this through water well permit requirements, certification of acres, incentive program requirements, allocation, pooling agreements, and groundwater transfers.

Integrated Management Plan (2016)

The purpose of the Integrated Management Plan is to maintain a desired balance between water uses and water supplies of both surface water and groundwater sources in both the near-term and long-term future. Goals include keeping Nebraska in compliance with the Republican River Compact, minimize adverse economic, social, and environmental consequences, and reserve any streamflow available from any use that would negate the benefit of regulations or programs. It does this through groundwater controls, surface water controls, incentive programs, and monitoring.

Pooling Arrangements & Agreement Rule 7-6 (2014)

The Pooling Arrangements and Agreement Rule is an effort to conserve groundwater within the district and provides greater flexibility for groundwater users. It allows a single landowner to combine more than one tract of land for the purpose of allocating groundwater among total combined certified acres. It also allows two or more owners of land to come together and allocate groundwater among the total combined certified irrigated acres.

Republican River Basin-Wide Plan (2019)

The Republican River Basin-Wide Plan is joint document developed by the Upper Republican, Middle Republican, Lower Republican, and Tri-Basin Natural Resources Districts and the NeDNR. The purpose of the plan is "to sustain a balance between water uses and water supplies so that the economic viability, social and environmental health, safety, and welfare of the Republican River Basin can be achieved and maintained for both the near term and long term." The plan also helps to ensure Nebraska continues to comply with the Republican River Compact. Also included are action items so the goals and purpose of the plan are met.

Mitigation Strategy

Funds for the Lower Republican NRD are sufficient to pursue new capital projects and have increased over recent years. Although a large portion of funds are not already dedicated to a specific project, the district will likely still need grant assistance to help pay for the projects listed below. The district has experience applying for grants and has been awarded grants from the USDA, NeDNR, and NDEE in the past.

New Mitigation Actions

Mitigation Action	Telemetry on Water Meters
Description	Add radio feed telemetry on all water meters. This will be needed for approximately 3,300 meters.
Hazard(s) Addressed	Drought
Estimated Cost	$3,000 - $5,000 per meter
Funding	General Budget
Timeline	2-5 Years
Priority	Medium
Lead Agency	Assistant Manager
Status	Planning Stage. Pilot meters have been installed for testing.

Mitigation Action	Thompson Creek Watershed Project
Description	Increase water storage for the watershed to stay in compliance with the Republican River Compact. The project will also help reduce flooding in the watershed.
Hazard(s) Addressed	Drought, Flooding
Estimated Cost	$600,000+
Funding	General Budget
Timeline	5+ Years
Priority	High
Lead Agency	General Manager
Status	Planning Stage. A request for proposals will be sent out to contractors soon.

Mitigation Action	Turkey Creek Watershed Project
Description	Increase water storage for the watershed to stay in compliance with the Republican River Compact. The project will also help reduce flooding in the watershed.
Hazard(s) Addressed	Drought, Flooding
Estimated Cost	$600,000+
Funding	General Budget
Timeline	5+ Years
Priority	High
Lead Agency	General Manager
Status	Planning Stage. A request for proposals will be sent out to contractors soon.

NRD Profile

Middle Republican Natural Resources District

Quad Counties
Multi-Jurisdictional Hazard Mitigation Plan Update

2021

Local Planning Team

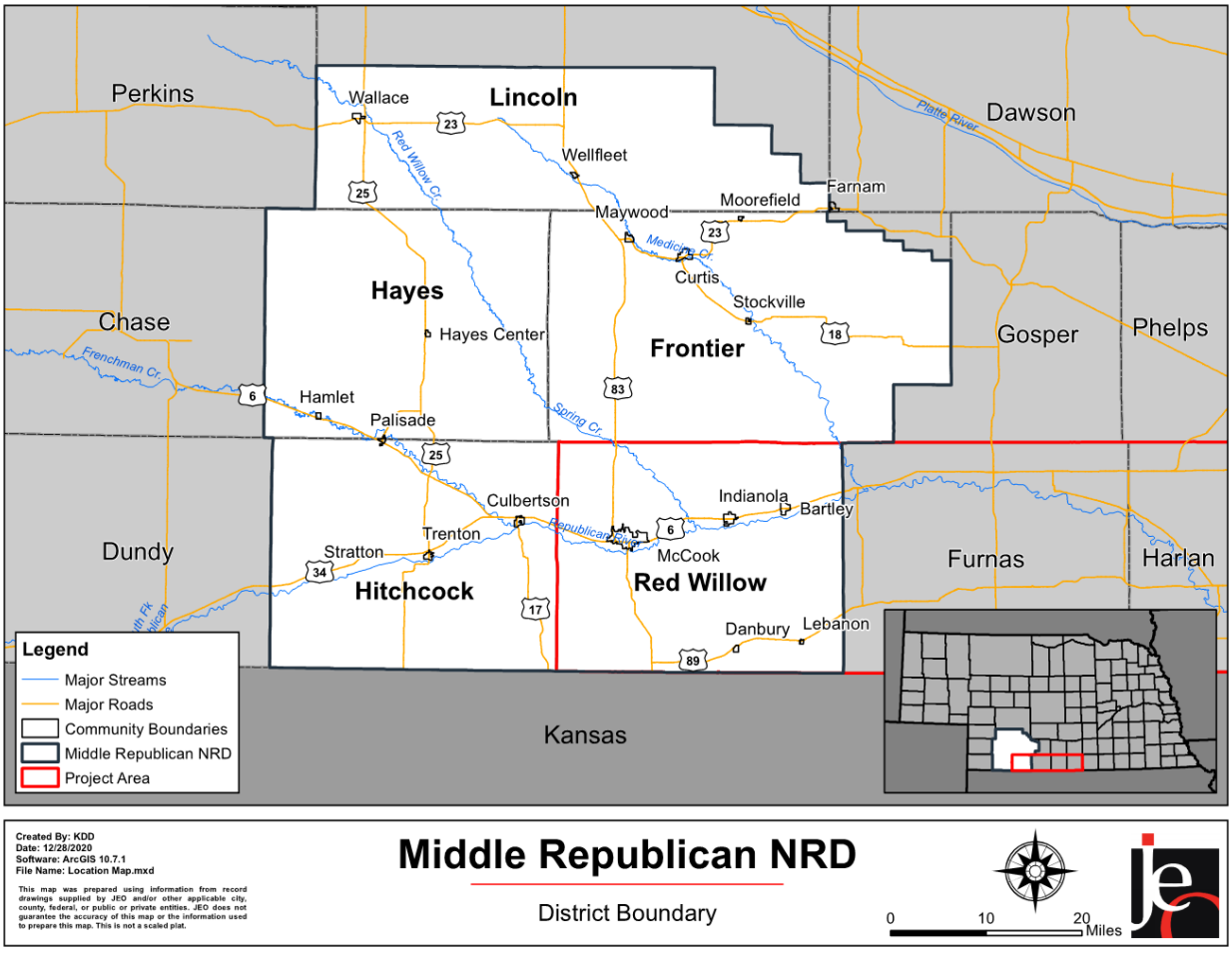
Table MRD.1: Middle Republican Natural Resources District Local Planning Team

Name	Title	Jurisdiction
Colt Livingston	Groundwater Programs Specialist	Middle Republican NRD
Jack Russell	Manager	Middle Republican NRD

Location and Geography

The Middle Republican Natural Resources District (NRD) is located in southwestern Nebraska and covers 2,459,520 acres. It is comprised of all of Hitchcock, Hayes, and Red Willow Counties, most of Frontier County, and part of Lincoln County. Major waterways in the area include the Republican River, Frenchman Creek, Spring Creek, Red Willow Creek, and Medicine Creek. The Middle Republican Natural Resources District topographic regions include dissected plains, valleys, sandhills, and plains.[4]

Figure MRD.1: Middle Republican NRD



4 Center for Applied Rural Innovation. "Topographic Regions Map of Nebraska." 2001. http://digitalcommons.unl.edu/caripubs/62.

Transportation

The Middle Republican NRD's major transportation corridors include US Highways 6, 34, and 81 and State Highways 17, 18, 23, 25, and 89. The most traveled route is US Highway 83 with an average of 6,365 vehicles daily, 445 of which are trucks.[5] Fertilizer is the chemical most often transported. No large chemical spills or significant transportation events have occurred within the district. The major railroads which travel through the NRD include Nebraska Kansas Colorado Railway, Burlington Northern Santa Fe Railway, and Amtrak. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community, as well as areas more at risk of transportation incidents.

Demographics

According to the local planning team the Middle Republican NRD serves a population of approximately 21,000 people over five counties. However, the U.S. Census Bureau does not recognize the NRD as a distinct unit. As a result, there is no demographic data generated specifically for the NRD. For information regarding demographic data, please refer to a specific jurisdiction's profile, *Section Three: Demographics and Asset Inventory,* the *Hitchcock, Hayes, and Frontier Hazard Mitigation Plan,* and the *Twin Platte NRD Hazard Mitigation Plan*.

Future Development Trends

The Middle Republican NRD is currently in the process of reconstructing a flood control structure. No other changes have occurred for the NRD in the past five years. Over the next five years, no developments are planned.

Community Lifelines

Critical Facilities

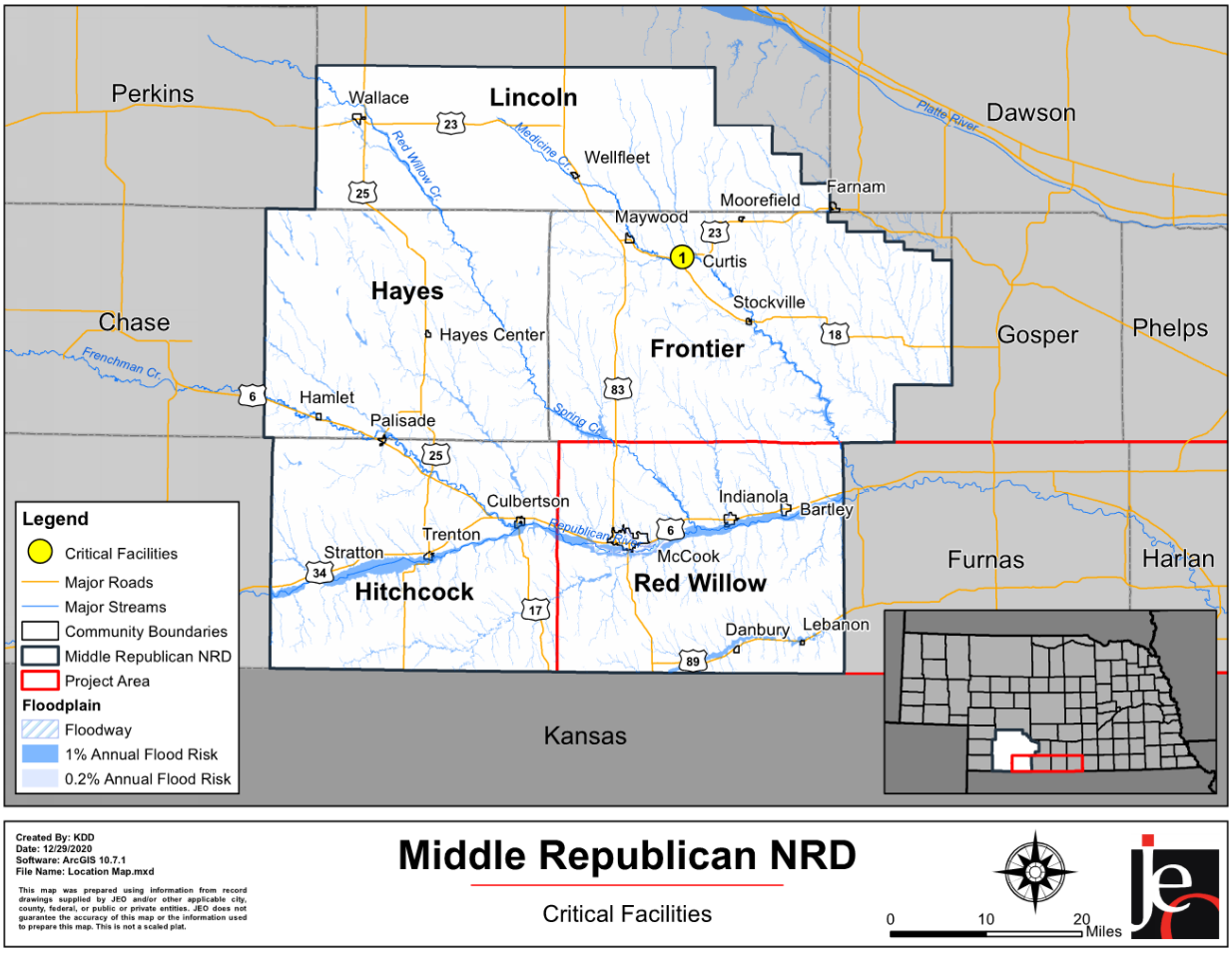
Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public, and essential for returning the jurisdiction's functions to normal during and after a disaster per the FEMA Community Lifelines guidance. Critical facilities were identified during the original planning process and updated by the local planning team as part of this plan update. The following table and figure provide a summary of the critical facilities for the NRD.

Table MRD.2: Critical Facilities

CF Number	Name	Community Shelter (Y/N)	Generator (Y/N)	Floodplain (Y/N)
1	Middle Republican NRD Building	N	N	N

5 Nebraska Department of Roads. 2018. "Interactive Statewide Traffic Counts Map." [map]. https://gis.ne.gov/portal/apps/webappviewer/index.html?id=bb00781d6653474d945d51f49e1e7c34.

Figure MRD.2: Critical Facilities



Historical Occurrences

For historical hazard occurrences in Red Willow County, please refer to the *Red Willow County Profile*. Historical occurrences information for Hitchcock, Hayes, and Frontier Counties can be found in the *Hitchcock, Hayes, and Frontier Counties Hazard Mitigation Plan*. Lincoln County historical occurrence data can be found in the *Twin Platte NRD Hazard Mitigation Plan.*

The following table provides a summary of hazards that have affected or have the potential to affect the Middle Republican NRD. The district was evaluated for previous hazard occurrence and the probability of future hazard events on each of the 13 hazards profiled in this plan. The evaluation process was based on data collected; previous impacts or the potential for impacts to infrastructure, critical facilities, people, and the economy; and the proximity to certain hazards such as dams and levees. For example, while there have not been instances of levee failure in the district, there exists a possibility for a levee to fail in the future due to the presence of levees in the district.

Table MRD.3: Middle Republican NRD Hazard Matrix

Hazard	Middle Republican Natural Resources District
Animal and Plant Disease	X
Chemical Spills	X
Dam Failure	X
Drought	X
Earthquake	X
Extreme Heat	X
Flooding	X
Grass/Wildfires	X
Levee Failure	X
Severe Thunderstorms	X
Severe Winter Storms	X
Terrorism	X
Tornadoes and High Winds	X

Hazard Prioritization

The hazards discussed in detail below were either identified in the previous HMP and determined to still be of top concern or were selected by the local planning team from the regional list as relevant hazards for the district. The planning team prioritized the selected hazards based on historical hazard occurrences, potential impacts, and the district's capabilities. For more information regarding regional hazards, please see *Section Four: Risk Assessment*.

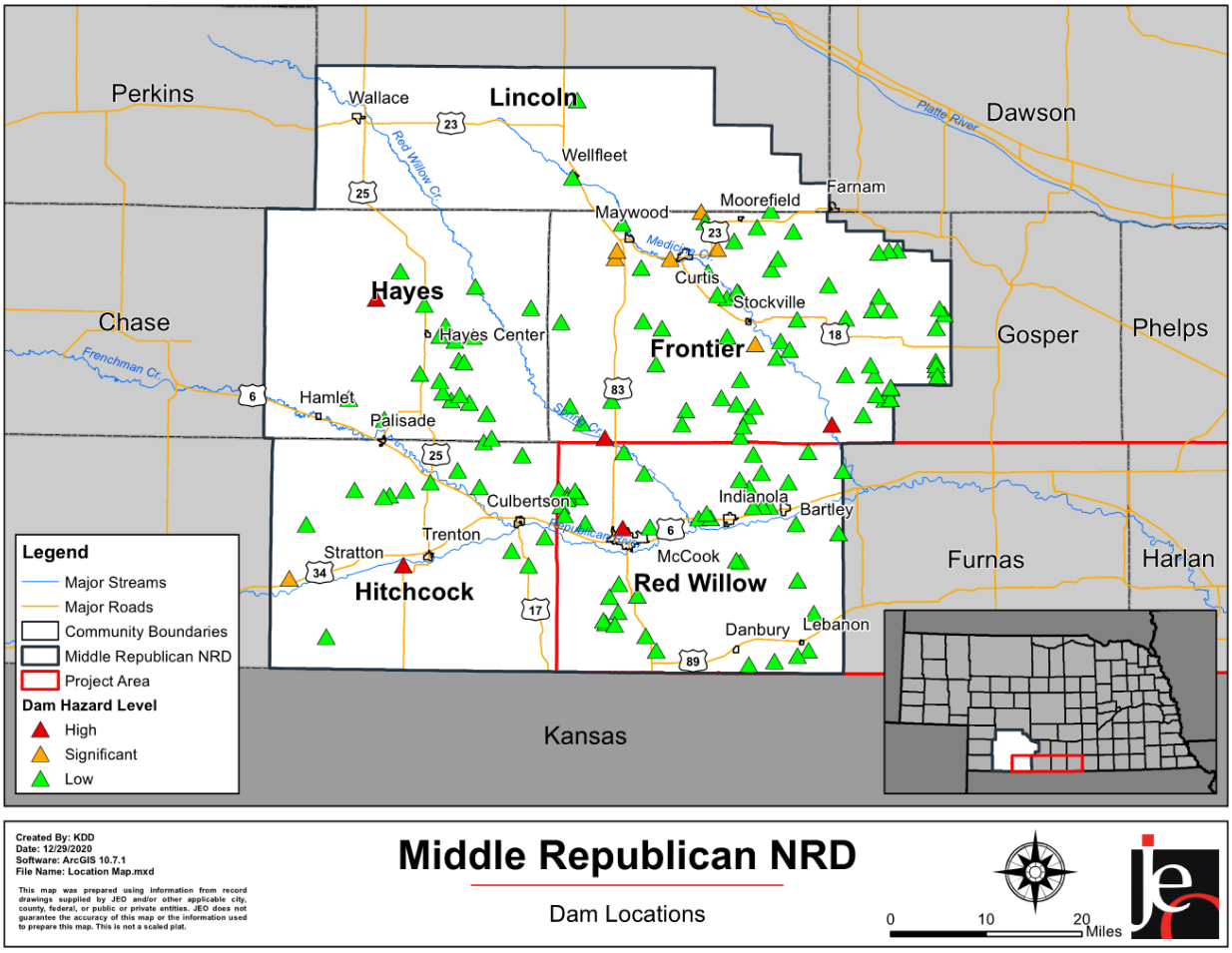
Chemical Spills

There are many chemical fixed sites within the district, however the NRD is most concerned with Texaco, oil wells, and feed lot operations. These industries and operations have the potential to contaminate both the surface water and groundwater within the district. The NRD is also concerned about chemigation with irrigated cropland. Regulations are in place for chemigation and the NRD performs inspections for any groundwater leaking. The NRD also educates irrigators through chemigation courses. No past spills have impacted groundwater or surface water.

Dam Failure

There are 150 dams located within the district, five of which are classified as high hazard dams. All five high hazard dams have emergency action plans due to the potential downstream impacts if they were to fail. Several dam failures have occurred in the past, however, no downstream damages occurred. Many of the dams are reaching the end of their designed life, which may lead to additional failures in the future if not properly addressed. Dam 2-A has possible crack which needs to be repaired. The Middle Republican NRD is particularly concerned with the P-2 dam, Blackwood 32 A dam, and the Blackwood 11 A dam. The NRD regularly monitors and inspects dams that they own. Figure MRD.3 shows the location of the dams in the district.

Figure MRD.3: Dam Locations



Drought

The district's primary concerns related to drought include impacts on crops, livestock, communities, and the Republican River Compact. The Republican River Compact apportioned the basin's water supply among the states of Nebraska, Colorado, and Kansas and allocated those supplies based on anticipated development. The purpose of the compact was to provide an equitable division of water in order to remove controversy and provide for an efficient use of waters in the Republican River basin. A drought in 2012 caused NeDNR to release 12,000-acre feet of water in four Bureau reservoirs in the district to stay in compliance with the Republican River Compact. This drought also caused many local problems. Irrigators within the NRD had to use more water due to the dry conditions and many trees died from a combination of strong winds and lack of water. During past droughts there has been sufficient groundwater due to aquifers, but surface water users have been impacted by low stream levels.

Drought as defined by the NRD is a substantial period of time with below normal precipitation and when lakes and streams are below normal levels. The NRD does not have a drought management plan but is going to conduct a drought exercise with the Republican River Basin and then implement a drought plan within a few years. To help reduce the impacts of drought, the Middle Republican NRD has done extensive water modeling to study the impacts of irrigation and drought. In addition, the district has also partnered with NRCS to implement irrigation practices

that save water like subsurface drip irrigation, moisture probes, and gravity-to-sprinkler irrigation systems.

Flooding

The Middle Republican NRD oversees a total of 33 flood control structures, primarily located along Dry Creek, Blackwood Creek, and Medicine Creek drainage areas. In 2019 several high intensity rain events occurred which caused the highest water levels in the Harlan County Dam. The NRD was largely unimpacted by the March 2019 flood event other than cleaning debris around the flood control outlets. In 2009, structure 32a failed from heavy rains that also caused flooding throughout the Republican River Basin. Flooding in the district primarily comes from the Republican River and its tributaries. Flooding events are likely to increase in both occurrence and intensity in the future due to climate change.

Governance

The NRD is governed by a group of 13 elected Board of Directors and entrusted with a broad range of responsibilities to protect and enhance Nebraska's many natural resources. The NRD serves both incorporated and unincorporated areas within their district and has the capability to financially and administratively assist villages, cities, and counties with mitigation actions (most commonly flood control and drainage improvements). The following positions may help implement mitigation projects:

- General Manager
- Assistant Manager
- Engineering Hydrologist
- Groundwater Programs Specialists
- Secretary & Bookkeeper
- Chief Technician

Capability Assessment

The NRD has the authority to levy taxes for specific purposes and to issue general obligation bonds to finance certain projects. The NRD also regularly engages in public education and information programs related to hazard mitigation in the area, and routinely works with other counties, cities, and villages within their jurisdictional boundaries.

The capability assessment consisted of a review of existing policies, regulations, plans, and programs with hazard mitigation capabilities. The following tables summarize the NRD's planning and regulatory capability; administrative and technical capability; fiscal capability; educational and outreach capability; and overall capability to implement mitigation projects.

Table MRD.4: Overall Capability

Overall Capability	Limited/Moderate/High
Financial resources to implement mitigation projects	Limited
Staff/expertise to implement projects	High
Public support to implement projects	Moderate
Time to devote to hazard mitigation	Limited

Plan Integration

The NRD has several planning documents that relate to hazard mitigation and are discussed below. No other plans were identified during this process. The district will seek out and evaluate any opportunities to integrate the results of the current HMP into other planning mechanisms and updates.

Groundwater Management Plan Rules and Regulations (2021)

The Ground Water Management Rules and Regulations were created to protect groundwater quantity, prevent or resolve conflicts between users of hydrologically connected groundwater and surface water, and implement controls to carry out the goals of the Integrated Management Plan. It does this through water well permit requirements, certification of acres, incentive program requirements, allocation, pooling agreements, chemigation permit requirements, and groundwater transfers.

Integrated Management Plan (2016)

The Integrated Management Plan has the purpose of "sustaining a balance between water uses and water supplies so that the economic viability, social and environmental health, safety, and welfare of the basin…can be achieved and maintained for both the near term and the long term." Goals include keeping Nebraska in compliance with the Republican River Compact, ensuring that groundwater and surface water users assume their share of responsibility within the Compact, minimize adverse economic, social, and environmental consequences, reserve and protect any increases to streamflow, and protect water wells that are dependent on recharge from surface water. It does this through ground water controls, compliance standards, management activities, surface water controls, incentive programs, monitoring, and studies.

Long Range Implementation Plan (2013)

The Long Range Implementation Plan outlined and explained the Middle Republican NRD's programs and projects for 2013-14 and activities planned out for the next five years. It also served to implement many of the goals and objectives found in the Master Plan, Ground Water Management Plan, and Integrated Management Plan. This plan is currently being updated as it has become out of date.

Master Plan (2012)

The Middle Republican NRD's Master plan "expresses the vision of the future and shapes the directing and activities" of the NRD. The Long Range Implementation Plan, annual budget, and Integrated Management Plan are the primary tools for implementing the Master Plan. Goals discussed in the plan include reducing soil erosion to acceptable limits, reducing flood and sediment damage, constructing flood control structures only when feasible, conserving and protecting soil resources, monitoring and maintaining the quality and quantity of surface and groundwater, managing groundwater and surface water to provide for future needs, maintaining the present quality of air, assisting with the development of drainage improvements, managing fish and wildlife habitat, assisting communities with the development of recreation and park facilities, maintain rangelands and woodland, and assisting local governments with the administration of solid waste and sanitary drainage. This plan is also currently being updated by the NRD.

Republican River Basin-Wide Plan (2019)

The Republican River Basin-Wide Plan is document developed by the Upper Republican, Middle Republican, Lower Republican, and Tri-Basin Natural Resources Districts and the NeDNR. The purpose of the plan is "to sustain a balance between water uses and water supplies so that the

economic viability, social and environmental health, safety, and welfare of the Republican River Basin can be achieved and maintained for both the near term and long term." The plan also helps to ensure Nebraska continues to comply with the Republican River Compact. Also included are action items so the goals and purpose of the plan are met.

Mitigation Strategy

Funds for the Middle Republican NRD are sufficient to pursue new capital projects and have stayed the same over recent years. However, the NRD may need assistance from grants to help pay for many of the actions listed below. The NRD has experience applying for grants and has been awarded Water Sustainability grants, Water Smart grant, Republican River RCPP grant, and a Nebraska Environmental Trust grant.

New Mitigation Actions

Mitigation Action	Develop a Drought Management Plan
Description	Create a drought plan for the district after the Republican Basin drought exercise.
Hazard(s) Addressed	Drought
Estimated Cost	$25,000
Local Funding	General Budget
Timeline	2-5 Years
Priority	Medium
Lead Agency	General Manager
Status	Not Started.