319 GRANT PROJECT PROPOSAL

CONTINUED SUPPORT OF THE EASTERN NORTH DAKOTA SOIL SALINITY DEMONSTATION NETWORK

Project Summary Sheet

PROJECT TITLE:
CONTINUED SUPPORT OF THE EASTERN NORTH DAKOTA SOIL SALINITY DEMONSTATION NETWORK

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WATERSHEDS: High Priority Watersheds of Eastern North Dakota

HYDROLOGIC UNIT CODES: Watersheds of the Rush River (09020204), the Red River (09020301), the Devils Lake Basin (09020201), the Sheyenne River (09020204), and the James River (10160001).

PROJECT TYPES	WATERBODY TYPES	NPS CATEGORY
(X) STAFFING & SUPPORT	( ) GROUNDWATER	(X) AGRICULTURE
(X) WATERSHED	(X) LAKES/RESERVOIR	(X) URBAN RUNOFF
( ) GROUNDWATER	(X) RIVERS	( ) SILVICULTURE
(X) I & E	(X) STREAMS	( ) CONSTRUCTION
	(X) WETLANDS	( ) RESOURCE

PROJECT AREA: The project area will include approximately the eastern one-third of North Dakota, with the named tributaries in the Northern Plains, Red River, Sheyenne James and Lake Agassiz RC&D Areas.

SUMMARIZATION OF MAJOR GOALS: The 2 primary goals of this program will be to (1) continue the current program in place for increased awareness of the soil salinity issues in the eastern portion of North Dakota and (2) work with landowners, agricultural producers, resource managers, and policy makers to get salinity management practices "on the ground". This project, led by the NDSU Extension Soil Health Specialist, will coordinate efforts by county agents, Soil Conservation Districts and County Crop Improvement Associations to treat salinity and promote demonstrations using partnerships. Financial assistance will be provided to landowners on selected sites to demonstrate effective saline management in order to improve soil health and reduce runoff of saline water into river systems. Needed research will be referred to the partnership and advisory committee for follow-up by NDSU Soil Health researchers.

PROJECT DESCRIPTION:

This project will focus on information, education and demonstrations of proper management of saline areas during the project period and transfer of that information to the public and cooperating organizations.

1) Increase awareness of salinity issues and effective management approaches that result in the improvement, protection, and management of saline soil areas and water resources that have been seriously impacted by long-term agronomic practices, excessive precipitation, and removal of native vegetation.

2) Improve effectiveness of saline soil management by implementing new and acceptable agronomic management recommendations on selected demonstration sites and surrounding areas.

3) Coordinate the delivery of multiple programs on salinity management to landowners, agricultural producers, resource managers, and policy makers by involving funding from the Environmental Protection Agency (EPA) 319 Program, the U.S. Department of Agriculture (USDA), and other state and non-governmental sources.

4) Directly assist and involve agricultural producers to work on improving and managing saline soil areas using multiple approaches.

FY 2015 Section 319 Funding Requested:	**$ 112,474**
Non-federal match:	**$ 74,983**
Other Federal Funds:	**$ 0**
Total Project Cost:	**$ 187,457**

2.0 STATEMENT OF NEED

2.1 Water Quality Priorities

The North Dakota Natural Resources Conservation Service (NRCS) estimates that there are at least 1 to 1.5 million acres of slightly saline soils in the state; and 225,000 to 300,000 acres of moderate to strongly saline soils. Over time, slightly saline soils are becoming moderately to strongly saline; and salinity is moving into more productive non-saline areas. The change is a subtle one, and as such, many producers do not understand the scope of the problem. Ditch-affected salinity impacts 30,000 acres caused directly by human influence and often can easily be corrected. The increase in saline acres is the result of the current wet cycle, which began in the early 1990's, and from a change in land use. Recent updates to soil surveys in Richland County, ND and Kittson County, MN indicate an increase in acres of saline soils. The increase in inventoried saline soils is due in part to the wet cycle and land use change, but is also the result of better soil inventory tools and a focus on mapping saline soils.

The geology of eastern North Dakota also contributes to the problem. The fertile soils of the Red River Valley, known as glacial Lake Agassiz, formed when sediments filled the lake after the last ice age ended about 10,000 years ago. During the ice age, a sheet of glacial ice

several thousand feet thick depressed the earth as much as 600 feet and created a huge bowl, resulting in several hundred feet of lake deposits. The Red River Valley is now a regional discharge area for the entire northern plains, with salty water moving into and through the valley.

Soils in North Dakota were formed under native prairie vegetation and subsequently converted to annual agricultural crops. Planting of annual crops along with long-term above average precipitation has caused an increase in soil salinity. Since annual crops use less moisture than native prairie vegetation, excess moisture accumulates in the soil profile. The unused moisture has caused water tables to raise, water to move laterally in the soil, and has allowed water to move to the fringes of wetlands and road ditches. Salts are soluble, and move easily with the water. Evaporation or evapo-transpiration removes water from an area, allowing salts to remain at or near the surface. Since it is economically impractical to seed millions of acres back to native prairie grasses in order to use the excess water, it is important to pursue management options acceptable to the agricultural economic system to mimic native grasses and improve water use.

Examples of agronomic methods that will use excess soil moisture and prevent water from carrying salts to the soil surface include: late-maturing, deep-rooted crops in a rotation; the inclusion of perennial vegetation such as alfalfa in a crop rotation, and the use of post-harvest, deep rooted cover crops planted after small grains. The use of newer technologies such as precision agriculture has shown promise as an effective agronomic tool to manage salinity. Current mapping services and soil testing available to farmers help identify saline areas in their fields and determine the level of salinity. Soil fertility needs can be identified and fertilizer rates adjusted to the amount needed, thus preventing the application of additional salt in the form of unused fertilizer.

If there is no remedial action taken, there will likely be billions of dollars in losses over the next few decades. Annually there will be at least 50 to 90 million dollars in the Red River Valley alone, according to Mike Ulmer, Regional Soil Scientist with NRCS. Many of the greatest value crops raised in the region are salt sensitive. These crops include edible beans, soybeans, potatoes, sugar beets (at germination), corn and wheat.

In a recent Conservation Innovation Grant (CIG) narrative submitted by Dr. Marinus Otte, NDSU Professor, Department of Biological Sciences, "sulfate can displace phosphate and so lead to secondary eutrophication and algal blooms. Sulfate salinity is an increasing concern to farmers and ranchers in North Dakota and the wider region. Sulfate concentrations in tile drain water in the Red River Valley range from 40-6610 mg/L, average 1300, median 490 in unpublished data from Roxanne Johnson, AES/NDSU, 2008. Many of the values observed by Johnson exceed the threshold levels established by the North Dakota Department of Health.

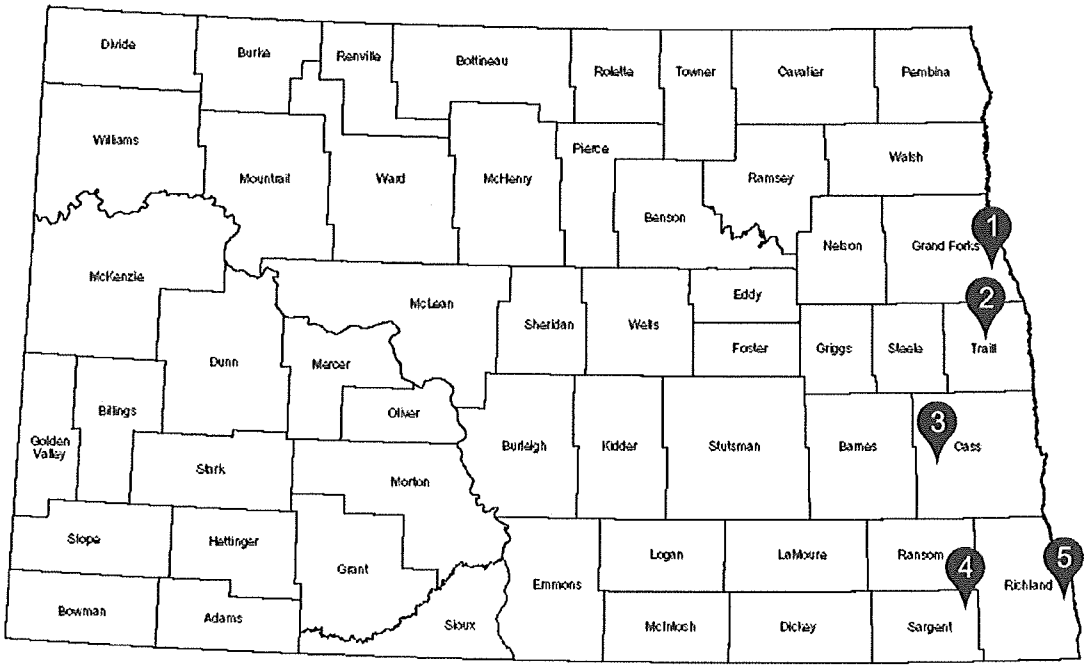
Johnson is in the final stages of completing a complimentary study to determine the salinity of water flowing from salinized cropland and the impacts to surface water. As water tables rise, the result of land use changes and less water use by vegetation, saline waters will enter surface waters from associated springs. If the issue with soil salinity is not addressed there will be major problems for water users in the future. Most salts, once dissolved in water, are not removed by natural processes and with present technology their removal is financially prohibitive. There are also indirect water quality impacts resulting from reduced vegetation on the soil surface and the associated runoff of pesticide and sediment.

Success stories exist with large-scale salinity control programs. Australia has implemented a nationwide strategy for dealing with the problem. The Montana Salinity Control

Association has been running a successful program for the last twenty years, and there are successful efforts ongoing in the Canadian Prairie Provinces.

An effective, sensible approach for the treatment of saline areas throughout North Dakota will have a profound positive impact on the state's economy by retaining many farm enterprises and farm related industries being affected by lost production due to soil salinization. Current USDA conservation programs such as the Agricultural Water Enhancement Program (AWEP) or the Cooperative Conservation Partnership Initiative (CCPI) offer good opportunities for land treatment for a large-scale area.

This project will continue an effort to increase the awareness of the detrimental impacts to soil and water quality from saline soil, using both summer field days at demonstration sites and winter discussion groups. Because it is not enough to just increase awareness, we will also focus our efforts on working with landowners, agricultural producers, resource managers, and policy makers to get salinity management practices "on the ground". Continuation of this project will promote the use of high moisture crop rotations, cover crops, and precision agriculture. Several demonstration sites have been established in 2013-2014, including sites in the following counties: Cass, Grand Forks, Richland, Sargent, Traill; for a total of five demonstration sites (see map below). With each site, there is a 5-10 acre demonstration area and in most cases producers are promoting soil health building practices and high water use rotations as preventative management across the entire field/quarter.



2.2 Targeted Audience

The targeted audience for this project is landowners including absentee landowners, agricultural producers, soil conservation districts, water resource district boards, county commissions, grower groups, policy makers, resource managers, and agency employees.

3.0 PROJECT DESCRIPTION

This is an ongoing educational project, where the NDSU Extension Service took over an existing project in 2012 and continued efforts through 2015 (Drs. Dave Franzen and Abbey Wick). Now with five demonstration sites in place, we are asking for continue funding of the current sites for 2015-2018 because we recognize that improvement to saline soil conditions takes five or more years. The main goal of the program is to increase awareness and get effective management practices for salinity management "on the ground" to reverse the increasing trend in the number of acres affected by saline soils in eastern ND. We will accomplish this by directly assisting and involving landowners/operators to improve management in saline areas. Most salaries (those of specialists and county agents) are supported through NDSU, so this proposal asks for funding to support a research/extension technician position to assist with plot installation and extension event coordination and continued operating funds to increase the on-the-ground, face-to-face landowner/crop grower activities and impacts (via specialists and agents).

3.1 Project Goals

This project promotes and demonstrates proper management of saline areas – bringing solutions to the public in various counties. The five existing demonstration sites were selected based on the potential for long-term producer involvement (many of the cooperators are involved in the county level Crop Improvement Associations), the producers ability to influence surrounding producers in their county/region, the interest/involvement of the county agent, the complexity of the salinity issue and the visibility of the site along major highways. With these factors considered, we have demonstration locations already in place (indicated with large 3'x5' signs, example shown below) that will be supported long-term and will have high impact within each county.

Specialists and county agents at NDSU then provide the technical support of monitoring of the soil conditions, checking soluble salt levels pre- and post-treatment and conducting visual observations and providing explanations to farmers. We have taken small groups of farmers by the demonstration locations to talk through why each management approach is expected to "work" in addition to several, well attended field days. We are focusing on the personal contact and attention needed to help producers implement changes to their management approaches as well as the repeated presentation of information in multiple ways. We feel this turns the demonstration sites into more than just something to look at but more of a personal connection and support network.

The goals of this project extend beyond just the demonstration areas, where we (the specialists and county agent) currently provide technical support on managing for soil health on the entire field where the demonstration areas are located. We walk the fields with the producers and sample bare spots where they have had issues with in the past and we work with them to come up with solutions for rotations to manage wet soils in the spring. We also bring awareness to other support available through 319 and NRCS programs. An example of the results of these interactions have included the seeding of 150 additional acres of cover crops at one demonstration site accompanied by a shift in rotations to extend the time period of a living root in the soil (i.e.

dormant seeding of wheat followed by a cover crop). Our goal is to not just practice salinity management on the demonstration sites alone, but extend our reach to have other cooperators within the county try some of the approaches on entire quarters. We have seen much success with this approach in 2014.

We use information collected from the demonstration sites to build content of the NDSU Soil Health webpage (www.ndsu.edu/soilhealth), which is currently supported by Wick (the state-level Extension Soil Health Specialist) and the Soil Health Extension Technician (who is currently funded by grants obtained from the ND Corn and ND Soybean Councils). Information and educational efforts have focused and will continue to focus on: (1) enhancing current efforts to increase awareness and demonstrate management of saline areas by partnering with groups and organizations; and (2) distributing information about the project in both large and smaller, more personal groups and through Extension circulars, videos and website information.

The project will continue to work with cooperating agencies, such as the NRCS, FSA and the North Dakota Soil Conservation Districts, with ongoing monitoring efforts to determine the effectiveness of saline improvement goals, not only in the 319 Program but also in the Conservation Reserve Program (CRP), Agricultural Water Enhancement Program (AWEP), Cooperative Conservation Partnership Initiative (CCPI), Environmental Quality Incentives Program (EQIP) and other USDA programs. Information gained from these assessments would be useful not only to the salinity project, but to other state and federal programs.

To summarize, the 2 primary goals of this program are to (1) continue the current program in place for increased awareness of the soil salinity issues in the eastern portion of North Dakota and (2) work with landowners, agricultural producers, resource managers, and policy makers to get salinity management practices "on the ground".

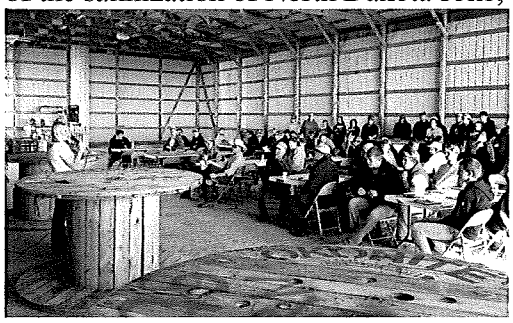
3.2 Objectives and Tasks:

Objective 1. Continue to increase awareness regarding the financial impacts and detriment to natural resources resulting from increases of saline soil in North Dakota. The main target audience will be agricultural producers; employees from NRCS, SCD's, and Extension; representatives from Water Resource Districts and North Dakota Legislators; agronomy centers; crop consultants; and fertilizer dealers.

Task 1: Maintain the already established demonstration sites within each of the identified watersheds until 2018. County agents from Cass, Grand Forks, Richland, Sargent, and Traill counties established fully functional demonstration sites. The design of each demonstration site is based on practices of local interest given markets, soil type, climate etc. using high visibility locations for the sites. Practices demonstrated include alfalfa strip establishment along a roadside or along CRP, incorporating cover crop mixes before, during and/or after crop seeding/growth/harvest, use of more salt-tolerant crops, use of deep-rooted, long-season crops and other ideas will be implemented in the coming year based on producer feedback. Agents and specialists have worked hard to get feedback from local producers and cooperators to select the most feasible practices with a high likelihood of adaptation by local producers – again personally connecting them to the demonstration sites.

Products: Establishment of 5 demonstration sites that are well supported, local data, visibility of solutions for growers and landowners, technical support, personal relationship development (trust and "buy in" from producers)

Task 2: Conduct workshops and field tours in order to increase the awareness and understanding of the salinization of North Dakota soils; and to offer treatment recommendations. In 2014, we have reached a total of 360 producers, consultants and educators using five different field days held over a four week time span at the various locations. At the Sargent County location, we drew a crowd of 108 people (see picture to left)!



Products: Better awareness and understanding by agricultural growers, natural resource managers, landowners and policy makers of saline soil issues, personal connections and discussion. Five field days per year (potentially reaching over 400 of our target audience), winter discussion-based workshops held within each county to reach a potential of 60 people per county (300 total) with information in an informal setting.

Task 3: Create informational materials to increase the understanding and treatment of the salinization of North Dakota's soils.

Products: The NDSU Soil Health website (www.ndsu.edu/soilhealth) is used to distribute informational materials including updates on demonstration projects established, their tour dates and locations, and development of a suite of circulars/bulletins along with videos that address causes and alleviation of salinity/sodicity problems. We will produce videos from each site (5 total), Extension circulars, impact reports (1 produced in 2013 and 5 produced in 2014) and other web-based resources that are of interest to producers.

Cost: website already funded by NCR-SARE, ND Corn Council and ND Soybean Council funds

Objective 2. Improve management methods that can be used to reduce salinity and/or manage saline soils in North Dakota.

Task 4: Identify new ways or a more suitable step-by-step approach to improve our management of saline soil conditions through trials on the demonstration sites. We are using some replicated experiments to help identify the best possible rotations to improve productivity on saline areas and have made the sites available and have provided access to cooperators and other research faculty at NDSU.

Products: Better management techniques to treat saline soils and much needed data to support the effectiveness of management practices across the RRV. Information will then be distributed to identified audience using approaches described in Task 3.

Task 5: We have been working with the NRCS Red River Valley MLRA office to fine tune soil factors of a Salinity Risk Index (SRI) and collection of samples needed to characterize different phases of soil series. The management factors of the equation are identified as a research need. We are also using our EM38 maps and samples collected at the demonstration sites to help improve salinity estimates/calibration curves using this technology.

Products: improved methods for estimating and evaluating salinity risk

3.3 Milestone Table: CONTINUED SUPPORT OF THE EASTERN NORTH DAKOTA SOIL SALINITY DEMONSTATION NETWORK

TASK/RESPONSIBLE ORGANIZATIONS	OUTPUT	QTY	7/1/2015 - 6/30/2016	7/1/2016 - 6/30/2017	7/1/2017 - 6/30/2018
OBJECTIVE 1: Task 1 – maintain demonstration sites already established	Increased awareness via demonstration site visibility	5	5 demonstration sites maintained	5 demonstration sites maintained	5 demonstration sites maintained
OBJECTIVE 1: Task 2 – use workshops and field tours to reach the public	Field days held in the summer and workshops/café talks in the winter	15	5 field days or workshops (1 per demonstration site)	5 field days or workshops (1 per demonstration site)	5 field days or workshops (1 per demonstration site)
OBJECTIVE 1: Task 3 – develop informational material	Use the NDSU Soil Health website as an outlet for information on demonstration sites and salinity management	1	videos produced at demonstration sites when appropriate, Extension impact reports generated by county agent to highlight project	videos produced at demonstration sites when appropriate, Extension impact reports generated by county agent to highlight project	compile information obtained for each of the 5 demonstration sites to develop educational materials (circulars, videos, fact sheets etc)
OBJECTIVE 2: Task 4 – test management approaches	Use demonstration sites to select best possible management approaches regionally	5			summarize management approach effectiveness across 5 demonstration locations
OBJECTIVE 2: Task 5 – work with the NRCS Soil Survey office in Fargo to refine the SRI and testing methods	Improved maps for risk of developing saline soil conditions and approaches for monitoring salinity	1	continued annually	continued annually	continued annually

3.4 Lead Agency: The NDSU Extension Service will be the lead project sponsor. The NDSU Extension Service county agents understand the stakeholders with either technical knowledge or concerns related to soil salinity/salinity in their counties and are a direct link to landowners and local elected officials who have the responsibility to manage soil and water resources. The project will be directed by the Assistant Professor in Soil Health Extension (Dr. Abbey Wick).

3.5 Roles/Responsibilities for Proper Oversight and Management of BMPs: During the project period of performance, NDSU Extension Service will be responsible for ensuring project participants comply with all aspects of the NPS 319 Program. Procedures in the North Dakota NPS Management Program Cost-share Guidelines for NPS Control BMPs (May 2008) will be adhered to.

4.0 COORDINATION PLAN:

4.1 Lead Project Sponsor and Cooperating Organizations: This proposal is sponsored by the NDSU Extension Service and directed by the Extension State Soil Health Specialist, Dr. Abbey Wick. Specific responsibilities of the Extension Soil Health Specialist will include coordinating with project personnel, drafting and administering subcontracts, reporting progress to appropriate groups, overseeing financial reporting, submitting semi-annual, annual, and final reports, leading information and education activities, representing and promoting the proposed project, and coordinating with other basin environmental and water management efforts in eastern North Dakota. This person will provide technical support to local NRCS field offices, SCD staff, 319 watershed coordinators and other conservation planners providing planning assistance to producers, and will assist county agents and Area specialists in Soil Health so that they can better provide direct one-on-one planning assistance to agricultural producers. Agricultural producers and landowners will be better informed on methods to manage saline soil.

4.2 Local Support for a the Extension Specialists in Soil Health: The Soil Health Initiative was a grass-roots effort spearheaded by the ND Soil Conservation Districts, the ND Irrigation Association and a number of commodity groups and others within the state representing a very large share of the growers and landowners in the state. The activities of this proposal are supported locally by North Dakota landowners, county water resource boards, soil conservation districts, Red River Basin Commission and communities.

4.3 Coordination with Other Pertinent Programs: Education and training initiatives of the salinity project support other 319 watershed projects. The project has also cooperated with the Natural Resources Conservation Service (NRCS) to further watershed education, resource manager training, and research activities in the basin and will continue to coordinate these activities. The NRCS provides many opportunities for cooperation on salinity management. The salinity project will assist with delivery of the Environmental Quality Incentives Program (EQIP) and Continuous CRP throughout the basin. The project will also work directly with NRCS personnel to plan and implement several salinity management projects. This proposal will continue collaboration as the farm bill provides additional funding for programs such as Conservation Stewardship

Program (CSP), Farmland Protection Program (FPP), Wetlands Reserve Program (WRP), Environmental Quality Incentives Program (EQIP), Wildlife Habitat Incentives Program (WHIP), Agricultural Water Enhancement Program (AWEP), Cooperative Conservation Partnership Initiative (CCPI), Conservation Reserve Program (CRP), and Continuous CRP. This project will provide technical support to local NRCS field offices, SCD staff, 319 watershed coordinators and others providing planning assistance to producers. Training sessions will result in better-trained conservation planners and thus conservation plans that address saline soil management. The project will also be cooperating extensively with non-governmental organizations such as numerous grower groups in the state and crop consulting organizations.

4.4 Similar Activities: The project specialist will review programs that have been effective in other states and countries and make a recommendation to the Salinity Advisory Committee on applicability to North Dakota. Research activities conducted in other state and countries will also be reviewed. Coordination with NRCS and NDDH is described in Section 4.3.

5.0 EVALUATION AND MONITORING PLAN:

5.1 Evaluate Project Goal, Objectives and Tasks: The Assistant Professor Extension Soil Health Specialist, Dr. Abbey Wick, will submit annual reports to the Soil Health Advisory Committee and the NDDH describing progress on goals, objectives and tasks.

5.2 Monitoring: A salinity monitoring guide will be developed for the project demonstration sites. Monitoring efforts will focus on improvement in vegetative growth of impacted saline areas, measurement of saline soil from selected sites. Soil samples were collected in a zone pattern, directed by the Veris or EM-38 at the onset of the project. Measurements will be taken each year when appropriate to determine if there are impacts to soil salinity resulting from the demonstrations. The specific methods for monitoring will be determined depending on site requirements.

5.3 Monitoring Strategy: Monitoring methods will be completed to determine if information and education (I&E) efforts are effective. The number of people attending events; as well as exit surveys and evaluations at the events will be the primary methods to determine effectiveness of the project. The project will initially achieve level 2 learning using the Kirkpatrick evaluation model, with the goal of reaching level 3 where knowledge is applied and used by the target audience. There will be at least two I&E events conducted annually. The targeted audiences are agricultural growers, landowners, natural resource professionals, city, county and state employees as well as elected and appointed officials.

5.4 Data Management: Data collected from monitoring efforts will be used to evaluate project progress as well the success of salinity reduction as the result of the BMP's applied. Data will also be managed and reported via GIS when possible. Reports of project monitoring results will be available for each demonstration at the end of the project period. These reports and any interim reports will be made available and shared with other agencies and projects conducting current and future soil salinity management within the region. Project evaluations will be conducted on a continuing basis by the member agencies

of the Soil Health Advisory Committee as well as the Soil Conservation Districts.

5.5 Models Used: Other successful efforts to reduce impacts from soil salinity in Canada and Montana will be review and adapted if applicable as determined by the Salinity Advisory Committee.

5.6 Long-term funding plans for the Operation and Maintenance (O&M): Ultimately the landowner is responsible for the operation and maintenance of demonstration sites; guidelines will be provided to participating landowners. Reasonable short-term O&M, five years or less, will be provided by the project.

6.0 BUDGET:

Table 1:MATCHING FUNDS	FY16	FY17	FY18	TOTAL (without indirect costs)
FY 2015 Section 319 Funding				
Funds (FA)	33,269	33,737	34,221	$101,227
Sub-total	**33,269**	**33,737**	**34,221**	**$101,227**
Other Federal Funds				
NRCS (TA)				
NRCS (FA)				
Sub-total	**0**	**0**	**0**	**0**
State/Local Match				
Cooperative Extension (FA)	21,593	21,610	24,282	67,485
Sub-total	**21,593**	**21,610**	**24,282**	**67,485**
PROJECT TOTALS	**54,862**	**55,347**	**58,503**	**168,712**

Table 2: FISCAL YEAR	FY16	FY17	FY18	319 FUNDS COSTS	CASH MATCH	IN-KIND MATCH	TOTAL FUNDS (without indirect costs)	OTHER FED FUNDS
Objective 1-2								
Tasks 1-5	33,269	33,737	34,221	101,227	67,485		168,712	
TOTAL PROJECT	**33,269**	**33,737**	**34,221**	**101,227**	**67,485**		**168,712**	

Budget Narrative:

Cash match from NDSU is comprised of salary and fringe benefits of the state soil health specialist (Abbey Wick) and five county agents (Michael Knudson – Grand Forks County; Alyssa Scheve – Traill County; John Kringler – Cass County; Melissa Blawat – Sargent County; Brock Shouldis – Richland County). Salary costs are $49,989, fringe benefits $ 17,496 and administrative costs (limited to 10%) are $7,498 for a total match of $74,983.

Cost (Objectives 1-2; Tasks 1-5); For FY16, FY17, FY18:

Stipends/Fringe Benefits ($48,352):

- $35,816 technician salary at quarter time for 3 years (incl. 3% annual raise) plus fringe benefits $12,536 (35%)

Travel ($18,000):

- $18,000 anticipated travel costs ($1,200/year for 5 locations for 3 years)

Supplies ($6,750):

- $5,250 in seed costs for demo plots ($350/year for 5 locations for 3 years)
- $1,500 in consumable supplies such as bags etc ($100/year for 5 locations for 3 years)

Printing ($1,875):

- $1,875 in printing costs (handouts for field days; $125/year for 5 locations for 3 years).

Fees ($26,250):

- $12,000 in tent rental for field tours ($800/year for 5 locations for 3 years)
- $3,750 in port-o-potty rentals for field tours ($250/year for 5 locations for 3 years)
- $4,500 in soil analyses ($300/ year for 5 locations for 3 years)
- $6,000 in video production ($1,000/video, produce 2 per year for 3 years)

Budget for EPA 319 CONTINUED SUPPORT OF THE EASTERN NORTH DAKOTA SOIL SALINITY DEMONSTATION NETWORK

	FY 16	FY 17	FY 18	TOTAL
FY 2015 Section 319 Funding	**$36,966**	**$37,486**	**$38,023**	**$112,474**
Technician	11,588*	11,935	12,293	$35,816
FB	4,056	4,177	4,303	$12,536
Travel	6,000	6,000	6,000	$18,000
Supplies	2,250	2,250	2,250	$6,750
Printing	625	625	625	$1875
Fees	8,750	8,750	8,750	$26,250
Direct Costs	**$33,269**	**$33,737**	**$34,221**	**$101,227**
IDC 11.111%	$3,696	$3,749	$3,802	$11,247
Total Requested	**$36,965**	**$37,486**	**$38,023**	**$112,474**
NDSU Match	**$23,992**	**$24,011**	**$26,980**	**$74,983**
Total Budget	**$60,957**	**$61,497**	**$65,003**	**$187,457**

*Technician salary (1/4 time) is requested to provide support for establishment and sampling of sites across the various counties. This allows for the Soil Health Specialist to spend time on education efforts with county agents, producers etc. while on-site.

7.0 PUBLIC INVOLVEMENT

Public involvement in the Soil Salinity Project will be assured through the involvement of the Soil Health Advisory Committee and oversight of project activities by the NDSU Extension Service in eastern North Dakota. Furthermore, local participation is an integral part of the development and prioritization of the delivery mechanism for this project.