**Abstract**

**AI in Agriculture**

**Department of Agriculture**

**1301 E 6th Ave**

**Helena, MT 59601**

**5/2/2025**

The AI in Agriculture project is designed to determine whether AI can aid farmers in determining issues across their farm. The goals include increasing worker and crop productivity, decreasing resource use, and increasing profits. The project will be handled by two analysts and three consultants. The consultants and analysts will work together at the beginning of the project to design various systems for the farmers as baseline starting systems, and continue to work on each system to meet any specific farmer needs. The two analysts are tasked with analyzing the data produced, creating reports, and handling the asynchronous communication with the farmers and planning. The three consultants are tasked with helping the farmers out in the field, including installing the system, providing guidance, and helping troubleshooting issues. The result of the project will be a research document that accumulates all of the data that the project gathered and decide on whether AI has any use in Agriculture.

**Project Charter Plan**

**AI in Agriculture**

**Department of Agriculture**

**1301 E 6th Ave**

**Helena, MT 59601**

**3/18/2025**

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# Executive Summary

Due to the dramatic increase in the input costs of agriculture, there is a need to increase the efficiency of its use. Since these costs have more than doubled, this problem only gets worse as the farm gets bigger. AI has the potential to help increase productivity while making more efficient use of the expensive input resources. This project will flesh out a number of test farms with the appropriate infrastructure to test how effective AI is at recommending and targeting the disbursement of resources, if it is worth it for more farms to undergo the expense and flesh out a few systems to kick provide a starting point for Montana farmers.

# Project Purpose/Justification

## Business Need/Case

AI is a relative unknown for many use cases, though it has shown promise in pattern recognition and identification. Agriculture is a well established industry, so adding a technology that can aggregate all of that data and apply it to each farm nationwide could serve to increase productivity while decreasing resource use.

## Business Objectives

This solution has the potential to increase the productivity of farms while decreasing the environmental impact of farming.

* Increase productivity
* Reduce resource use
* Minimize environmental impact

# Project Description

Introducing AI and other monitoring measures to farms would allow for more in-depth monitoring and would be able to provide feedback that includes considerable industry knowledge from throughout the country. Implementing AI and other monitoring technologies into a few farms around the state would allow for real world data to be obtained and allow for a business case to be made for more farms to implement AI.

## Project Objectives and Success Criteria

These objectives align with the criteria outlined below:

* Decrease the operating cost of the farm by 20%, after accounting for cost of implementation
* Reduce resource usage per unit of crop by 5%
* Reduce nutrient Runoff by 10%
* Decrease the time it takes to recognize disease by 20%
* Have the systems in operation for at least 3 years

## Requirements

This project must meet the following list of requirements to achieve success.

* The excess profits must exceed the high ongoing expense
* The day-to-day operation of the system should be manageable by the existing farmers with light guidance

Additional requirements may be added as necessary, with project sponsor approval, as the project moves forward.

## Constraints

The following constraints pertain to the project:

* The implementation cost should not exceed the allocated budget for each farm
* There will be 3 traveling consultants to help the farmers after each farm is set up
* 2 analysts will be remotely monitoring the AI systems after they are set up

## Assumptions

The following are a list of assumptions. Upon agreement and signature of this document, all parties acknowledge that these assumptions are true and correct:

* The farmers will voluntarily sign up for the program
* This is a test of AI’s potential, so it is acknowledged that everything the AI recommends during the test should be taken with a grain of salt
* This is a multi-year test, with the presumption that AI will improve during this time

## Preliminary Scope Statement

The AI in Agriculture’s scope will include the rollout of the hardware required for the systems to work, the training of the farmers in the systems, and monitoring the systems and providing feedback to improve them over the course of the project. New personnel with knowledge of how AI works will be hired or recruited from other teams and trained in the specific goals prior to the rollout of the systems. All project funding will be managed by the project manager up to and including the allocated amounts in this document. This project will conclude after half the systems have been operational for 3 years and the final report has been completed and published.

# Risks

The following risks for the AI in Agriculture project have been identified. The project manager will determine and employ the necessary risk mitigation/avoidance strategies as appropriate to minimize the likelihood of these risks:

* Increasing operational expenses of AI models
* AI being unable to reduce the environmental impact of agriculture
* Farmers being unwilling to volunteer for the program

# Project Deliverables

The following deliverables must be met upon the successful completion of the AI in Agriculture project. Any changes to these deliverables must be approved by the project sponsor.

* A report on the effectiveness of AI in Agriculture
* Technical documentation of the systems used in the project
* Recommendations on the crops that benefit the most from AI

# Summary Milestone Schedule

The project Summary Milestone Schedule is presented below. As requirements are more clearly defined this schedule may be modified. Any changes will be communicated through project status meetings by the project manager.

|  |  |
| --- | --- |
| **Summary Milestone Schedule – List key project milestones relative to project start.** | |
| **Project Milestone** | **Target Date (mm/dd/yyyy)** |
| 1. Project Start | 03/30/2025 |
| 1. Staff Hired and Trained | 4/30/2025 |
| * Complete Solution Design | 05/15/2025 |
| 1. Acquire Hardware and Software | 05/30/2025 |
| 1. Rollout to Several Farms | 07/15/2025 |
| 1. Start Complete System Analysis and Improvements | 08/20/2025 |
| 1. Project Complete | 01/30/2029 |

# Summary Budget

The following table contains a summary budget based on the planned cost components and estimated costs required for successful completion of the project.

|  |  |
| --- | --- |
| **Summary Budget – List component project costs** | |
| **Project Component** | **Component Cost** |
| 1. Personnel Resources | $1,680,000 |
| * Hardware | $1,000,000 |
| 1. Software and Licensing | $500,000 |
| 1. Travel | $250,000 |
| **Total** | **$3,430,000** |

# Project Approval Requirements

Success for the AI in Agriculture project will be achieved when the final report on the effectiveness of AI in Agriculture is completed and the report, along with the technical documentation of the systems, is handed to Mr. Eric Sommers (PS, I have not called him, this person may change). Mr. Eric Sommers will also authorize completion of the project.

# Project Manager

Emmett Pierson is named Project Manager for the duration of the AI in Agriculture project. Mr. Pierson’s responsibilities include managing the activities of the various teams, while being the first contact for the farmers. The team will consist of 2 traveling consultants to aid the farmers and 3 analysts to analyze the systems and improve the AI model. Mr. Pierson is authorized to approve all budget expenditures up to, and including, the allocated budget amounts. Any additional funding must be requested through the Project Sponsor, Eric Sommers. Mr. Pierson will provide monthly updates to the Project Sponsor.

# Authorization

Approved by the Project Sponsor:

Date:

Eric Sommers

State Statistician

**Project Scope Statement**

**AI in Agriculture**

**Department of Agriculture**

**1301 E 6th Ave**

**Helena, MT 59601**

**Date**

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# Introduction

This Project Scope Statement serves as a baseline document for defining the scope of the AI in Agriculture project, project deliverables, work which is needed to accomplish the deliverables, and ensuring a common understanding of the project’s scope among all stakeholders. All project work should occur within the framework of the project scope statement and directly support the project deliverables. Any changes to the scope statement must be vetted through the approved Project Change Management Process prior to implementation. This completion date for this project is January 30th, 2029.

# Project Purpose and Justification

The AI in Agriculture project has been approved to perform an experiment on whether AI can improve the agricultural process. The primary purpose is to see if AI can increase productivity by being equivalent to multiple highly attentive employees and/or increase efficiency by allocating resources more effectively. As small to medium size farms can’t do this kind of testing without aid from the government, this project will allow for a more equal spread of the means it requires to perform in this project. If there does end up being a cost saving of any kind, it would benefit the government and the people by the farmer either being able to sell their crop for a lower price, or to take fewer subsidies from the government in the future. Additionally, the fewer resources are used in each field, the more those resources can be used for other things, like exporting fertilizer abroad, or drinking water instead of dumping it on plants. The AI in Agriculture project is poised to reduce costs by at least 20%.

# Scope Description

The scope of the AI in Agriculture project is to plan, design, build, and analyze AI solutions for a few different types of crops in Montana. Given each crop requires different things, each solution will emphasize a different aspect of the system. Each solution will have a list of compromises and expected successes, approved by the farmer before implementation. There will be moisture monitors, nutrient monitors, and cameras, all to determine exactly what is going on with the crops at all hours of the day.

# High Level Requirements

The final report and systems would include the following requirements:

* Refined systems with technical documentation
* Feedback on what compromises were consequential
* Results on the financials of the system

# Boundaries

AI in Agriculture project includes all work associated with training capable staff, planning, designing, and implementing various systems, as well as overseeing the first 3 years of operation and analyzing the resulting data. The analysts will also oversee recommending improvements to the systems and AI models, in a way that would not substantially increase the upfront cost of the system. The project does not handle the day-to-day farming activities or operation of the system. Once the 3 years are over, the maintenance and troubleshooting relating to the system will be the duty of the farmer, as the project would then be over.

# Strategy

For the AI in Agriculture project, the first step will be for the consultants and analysts to learn as much as they can about AI in Agriculture solutions. This would involve talking to any vendors offering the service, talking to experts in various forms of agriculture, and talking to various farmers (preferably the ones they would be working with in the next phase). Using that advice, they will then be tasked with developing a few solutions, with the help of some experts, and pitching those solutions to farmers around the state of Montana. Once a farmer agrees to implement a solution, it will be implemented at a time when it does not impact the farmer too severely. Then, the consultants will travel around to the various farmers, helping them whenever necessary, and the analysts will analyze the data, talking to experts, and suggesting improvements to the system. The project manager will ensure that the project proceeds on schedule.

# Deliverables

There are several deliverables which will be produced because of the successful completion of the AI in Agriculture project. If all the following deliverables are not met, then the project will not be considered successful. The Project Manager is responsible for ensuring the completion of these deliverables.

1. Deliverable 1 – Documentation on the tested systems
2. Deliverable 2 – A report on the effectiveness of each system
3. Deliverable 3 – Several working examples of AI powered farms

# Acceptance Criteria

Acceptance criteria have been established for the AI in Agriculture project to ensure thorough vetting and successful completion of the project. The acceptance criteria are both qualitative and quantitative in nature. All acceptance criteria must be met to achieve success for this project:

1. Meet all deliverables within scheduled time and budget tolerances
2. Provide working examples of AI powered farms

# Constraints

Several constraints have been identified for the AI in Agriculture project. It is imperative that considerations be made for these constraints throughout the project lifecycle. All stakeholders must remain mindful of these constraints as they must be carefully planned for to prevent any adverse impact on the project’s schedule, cost, or scope. The following constraints have been identified for the AI in Agriculture project:

1. After the farms are set up, the project manager will only work 50% of the billable hours on this project
2. Since each farmer’s participation is voluntary, they are also able to pull out at any time
3. Each farm needs to be as low budget as possible to allow for as many experiments as possible

# Cost Estimate

The estimated costs for this project are included in the table below. As the project proceeds and any additional costs become known, this cost estimate will be refined and communicated to all project stakeholders.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Expense** | **Estimated Budget** | **Expended to Date** | **Estimate to Complete** | **Variance** |
| Labor |  |  |  |  |
| Internal | $1,560,000 | $23,000 | $1,537,000 | +/- $150,000 |
| External | $200,000 | $0 | $200,000 | +/- $50,000 |
| Software | $500,000 | $0 | $500,000 | +/- $100,000 |
| Hardware | $1,000,000 | $0 | $1,000,000 | +/- $100,000 |
| Other | $250,000 | $0 | $250,000 | +/- $50,000 |
| Total | $3,310,000 | $23,000 | $3,287,000 |  |

# Cost Benefit Analysis

A cost benefit analysis has been performed for the AI in Agriculture project. If the project meets expectations and Montana farmers adopt AI solutions, it is projected that the reduction in farming subsidies would equal 5%. While the percentage isn’t big, that would amount to $229 million dollars saved, using the $4.6 billion dollars that Montana farmers received that year. This project is to verify those claims, as it would be worth subsidizing systems for farmers if the claims regarding increased efficiency pan out.

Sponsor Acceptance

Approved by the Project Sponsor:

Date:

Eric Sommers

State Statistician

**Work Breakdown Structure (WBS)**

**AI in Agriculture**

**Department of Agriculture**

**1301 E 6th Ave**

**Helena, MT 59601**

**3/18/2025**

# Introduction

The Work Breakdown Structure presented here represents all the work required to complete this project.

# Outline View

1. AI In Agriculture
   1. Initiation
      1. Evaluation & Recommendations
      2. Develop Project Charter
      3. *Deliverable:* Submit Project Charter
      4. Project Sponsor Reviews Project Charter
      5. Project Charter Signed/Approved
   2. Planning
      1. Create Preliminary Scope Statement
      2. Determine Project Team
      3. Project Team Kickoff Meeting
      4. Project Team Training
         1. Consult with vendors
      5. Develop Project Plan
      6. Submit Project Plan
      7. *Milestone:* Project Plan Approval
   3. Execution
      1. Project Kickoff Meeting
      2. Verify & Validate User Requirements
      3. Design System
      4. Procure Hardware/Software
         1. Narrow down vendors
         2. Determine system limitations
         3. Negotiate contracts
      5. Install Farm Systems
         1. Custom plan per farmer
         2. Install the system
         3. Perform analysis
         4. Document for the next installation
   4. Control
      1. Weekly Project Management
         1. Answer farmer questions
         2. Analyze the data coming in
         3. Monitor the farms
      2. Risk Management
      3. Update Project Management Plan
   5. Closeout
      1. Audit Procurement
      2. Document Lessons Learned
      3. Gain Formal Acceptance
         1. Publish results
      4. Archive Files/Documents

# WBS Dictionary

| Level | WBS Code | Element Name | Definition |
| --- | --- | --- | --- |
| 1 | 1 | AI In Agriculture | All work to perform a test of AI in Agriculture |
| 2 | 1.1 | Initiation | The work to initiate the project |
| 3 | 1.1.1 | Evaluation & Recommendations | Working group to evaluate solution sets and make recommendations. |
| 3 | 1.1.2 | Develop Project Charter | Project Manager to develop the Project Charter. |
| 3 | 1.1.3 | *Deliverable:* Submit Project Charter | Project Charter is delivered to the Project Sponsor. |
| 3 | 1.1.4 | Project Sponsor Reviews Project Charter | Project sponsor reviews the Project Charter. |
| 3 | 1.1.5 | Project Charter Signed/Approved | The Project Sponsor signs the Project Charter which authorizes the Project Manager to move to the Planning Process. |
| 2 | 1.2 | Planning | The work for the planning process for the project |
| 3 | 1.2.1 | Create Preliminary Scope Statement | Project Manager creates a Preliminary Scope Statement. |
| 3 | 1.2.2 | Determine Project Team | The Project Manager determines the project team and requests the resources. They will be new employees as this will be a long-running project that requires a specific skillset. |
| 3 | 1.2.3 | Project Team Kickoff Meeting | The planning process is officially started with a project kickoff meeting which includes the Project Manager, Project Team and Project Sponsor (optional). |
| 3 | 1.2.4 | Project Team Training | The team getting up to speed on the current environment around both AI and agriculture, focusing on where more automation can occur. |
| 4 | 1.2.4.1 | Consult with vendors | Learn what the various vendors offer as well as what each one deems as important. |
| 3 | 1.2.5 | Develop Project Plan | Under the direction of the Project Manager the team develops the project plan. |
| 2 | 1.2.6 | Submit Project Plan | Project Manager submits the project plan for approval. |
| 3 | 1.2.7 | *Milestone:* Project Plan Approval | The project plan is approved and the Project Manager has permission to proceed to execute the project according to the project plan. |
| 2 | 1.3 | Execution | Work involved to execute the project |
| 3 | 1.3.1 | Project Kickoff Meeting | Project Manager conducts a formal kick off meeting with the project team, project stakeholders and project sponsor. |
| 3 | 1.3.2 | Verify & Validate User Requirements | The original user requirements is reviewed by the project manager and team, then validated with the users/stakeholders. This is where additional clarification may be needed |
| 3 | 1.3.3 | Design System | The technical resources design the new widget management system. |
| 3 | 1.3.4 | Procure Hardware/Software | The procurement of all hardware, software and facility needs for the project. |
| 4 | 1.3.4.1 | Narrow down vendors | Determine which vendors have the most compelling AI solution. Most functionality for the lowest price. |
| 4 | 1.3.4.2 | Determine system limitations | Determine what is important for each crop, and so what systems would be best for each, with a focus on their shortcomings. |
| 4 | 1.3.4.3 | Negotiate contracts | Negotiating for the best deal on long-term AI contracts |
| 3 | 1.3.5 | Install Farm Systems | The work involved in installing each farm with a solution. |
| 4 | 1.3.5.1 | Custom plan per farmer | Working with a farmer to develop a plan that fits their tech literacy, specific crop, environment, and goals. |
| 4 | 1.3.5.2 | Install the system | Executing the plan created with each of the farmers. |
| 4 | 1.3.5.3 | Perform analysis | Analyze what went well with installation, what could go better, and if the quantity of each sensor is adequate. |
| 4 | 1.3.5.4 | Document for the next installation | Mark down the analysis to aid in the next installations. Lighter form of documentation and will be referenced later during final analysis. |
| 2 | 1.4 | Control | The work involved for the control process of the project. |
| 3 | 1.4.1 | Weekly Project Management | Weekly communication with farmers. |
| 4 | 1.4.1.1 | Answer farmer questions | Answer the farmers’ questions, whether they are results or operations focused. |
| 4 | 1.4.1.2 | Analyze the data coming in | A running tally of the data so that the farmers and stakeholders can see the results. |
| 4 | 1.4.1.3 | Monitor the farms | Ensure each system is working as intended. |
| 3 | 1.4.2 | Risk Management | Risk management for the project, focusing on ensuring the farmers continue with the program for the allocated time. |
| 3 | 1.4.3 | Update Project Management Plan | Project Manager updates the Project Management Plan as the project progresses. |
| 2 | 1.5 | Closeout | The work to close-out the project. |
| 3 | 1.5.1 | Audit Procurement | Ensuring that the hardware loaned to the employees is returned at project completion. |
| 3 | 1.5.2 | Document Lessons Learned | Project Manager along with the project team performs a lessons learned meeting and documents the lessons learned for the project. |
| 3 | 1.5.3 | Gain Formal Acceptance | The Project Sponsor formally accepts the project by signing the acceptance document included in the project plan. |
| 4 | 1.5.3.1 | Publish results | Publish the results in either an article or a scientific paper to ensure that the success or failure of the project is known to the public. |
| 3 | 1.5.4 | Archive Files/Documents | All project related files and documents are formally archived. |

# Glossary of Terms

Level of Effort: Level of Effort (LOE) is how much work is required to complete a task.

WBS Code: A unique identifier assigned to each element in a Work Breakdown Structure for the purpose of designating the elements hierarchical location within the WBS.

Work Package: A Work Package is a deliverable or work component at the lowest level of its WBS branch.

WBS Component: A component of a WBS which is located at any level. It can be a Work Package or a WBS Element as there's no restriction on what a WBS Component is.

WBS Element: A WBS Element is a single WBS component and its associated attributes located anywhere within a WBS. A WBS Element can contain work, or it can contain other WBS Elements or Work Packages.

A diagram of a project

AI-generated content may be incorrect. A diagram of a computer flowchart

AI-generated content may be incorrect. A diagram of a flowchart

AI-generated content may be incorrect. A diagram of a data flow

AI-generated content may be incorrect. A diagram of a computer

AI-generated content may be incorrect. A diagram of a computer network

AI-generated content may be incorrect. A diagram of a project

AI-generated content may be incorrect. A red square with black text

AI-generated content may be incorrect. A red rectangle with black text

AI-generated content may be incorrect.

**Quality Management Plan**

**AI in Agriculture**

**Department of Agriculture**

**1301 E 6th Ave**

**Helena, MT 59601**

**4/26/2025**

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# Introduction

The Quality Management Plan for the AI in Agriculture project will establish the activities, processes, and procedures for ensuring quality results upon the conclusion of the project. The purpose of this plan is to:

* Ensure quality is planned
* Define how quality will be managed
* Define quality assurance activities
* Define quality control activities
* Define acceptable quality standards

# Quality Management Approach

The quality management approach for the AI in Agriculture project has two big parts, the installation phase and the analysis phase. To be successful, this project will use an integrated quality approach to define the quality standards, measure the quality, and improve quality over the course of the project.

The quality of the study will be determined by how well the systems worked for the farmers by the end of the project and by the resulting analysis. Early on in the project the focus will be the farms and the farmers, and after that and especially at the end the focus will be on the analysis.

The project team will work with the Quality Group to define and document all organizational and project specific quality standards for both product and processes. All quality documentation will become part of the AI in Agriculture Project Plan and will be transitioned to operations upon the successful completion of the project.

Metrics will be established and used to measure quality throughout the project life cycle for the product and processes. The Quality Group Manager will be responsible for working with the project team to define these metrics, conduct measurements, and analyze results. These product and process measurements will be used as one criterion in determining the success of the project and must be reviewed by the project sponsor. Metrics will include:

* Schedule
* Resources
* Cost
* Process performance
  + Installation speed
  + Ease of operation
* Analysis quality
  + Thoroughness of the research
* Report reception

Quality improvements will be identified by any member of the project team or quality group. Each recommendation will be reviewed to determine the cost versus benefit of implementing the improvement and how the improvement will impact the product or processes. If an improvement is implemented the project manager will update all project documentation to include the improvement and the quality manager will update the organizational documentation to show the improvement affects.

# Quality Requirements / Standards

***Analysis Quality:***

The analysis quality standards and requirements will be determined by the project team and quality group. These standards will primarily be based on the state’s standards for research papers. There may be research-specific quality standards identified that are not currently part of the documented state standards. In this case, the quality group will review these newly identified standards and incorporate them into states documentation if approved. The project team will also document any newly identified quality standards into the AI in Agriculture project plan and ensure communication with all stakeholders.

As the analysis will be performed over the course of years, the elements of the project that will result in a quality analysis will be determined over the course of the project and be added to the final quality assessment document.

***Process Quality:***

The process quality standards and requirements will be determined by the project team and quality group. The pre-existing quality standards that are relevant to the project will be adhered to, though since this is a research project related to new technologies, there will be a significant amount of new standards that will be determined in project planning and deployment.

# Quality Assurance

During the deployment/process segment of the project, the quality assurance focuses on deploying the farming systems as quickly as possible while ensuring the product is intuitive for the farmers.

The project team and project manager will have a quick meeting after every deployed farm to determine what went well, what could have gone better, and what improvements are worth testing. The metrics will include how quickly the farm was deployed, how well the farmer understands it, and how well the system can be adjusted in the future.

During the analysis segment of the project, the quality assurance focuses on gathering and compiling all the data that the systems gather. Since the project will take multiple years with unexpected results, the aspects that determine the quality will be gathered over those years.

Before the final analysis phase at the end of the project, the project manager and team will refer to the points that were gathered during the runtime of the project and determine which ones to focus on. After the important aspects of the project are determined, the project manager will ensure that the final analysis incorporates the determined important aspects of the project.

# Quality Control

The deployment/process segment of the project, the primary metrics will be the speed of deployment, and the satisfaction of the farmer. We are aiming for each system to be installed in a week to maximize the number of farmers who can participate and to be as minimally intrusive as possible for the farmers. The satisfaction of the farmers is aimed at seven out of ten, though higher will be the goal.

The analysis segment of the project will have some requirements no matter what. It will include the difference in costs between normal farms and the AI-enriched farms, the difference in revenue, and how much the profits were affected. Other possible factors include productivity per acre, the prevalence of pests and disease, and the growth rate of plants.

# Quality Control Measurements

All Agriculture Project processes must be measured and fall within the established standards and tolerances. The below logs will be used by the project and quality teams in conducting these measurements and will be maintained for use as supporting documentation for the project’s acceptance.

***Quality Assurance Log***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Trial # | Date | Process Measured | Required Value | Actual Measured | Acceptable? (Y/N) | Recommendation | Date Resolved |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

***Quality Control Log***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Cable # | Date | Item Measured | Required Value | Actual Measured | Acceptable? (Y/N) | Recommendation | Date Resolved |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

**Sponsor Acceptance**

Approved by the Project Sponsor:

Date:

Eric Sommers

State Statistician

**Communication Management Plan**

**AI in Agriculture**

**Department of Agriculture**

**1301 E 6th Ave**

**Helena, MT 59601**

**4/16/2025**

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# Introduction

This Communications Management Plan sets the communications framework for this project. It will serve as a guide for communications throughout the life of the project and will be updated as communication needs change. This plan identifies and defines the roles of persons involved in this project. It also includes a communications matrix which maps the communication requirements of this project. An in-depth guide for conducting meetings details both the communications rules and how the meetings will be conducted, ensuring successful meetings. A project team directory is included to provide contact information for all stakeholders directly involved in the project.

# Communications Management Approach

The Project Manager will take a proactive role in ensuring effective communications on this project. The communications requirements are documented in the Communications Matrix presented in this document. The Communications Matrix will be used as the guide for what information to communicate, who is to do the communicating, when to communicate it and to whom to communicate.

As with most project plans, updates or changes may be required as the project progresses or changes are approved. Changes or updates may be required due to changes in personnel, scope, budget, or other reasons. Additionally, updates may be required as the project matures and additional requirements are needed. The project manager is responsible for managing all proposed and approved changes to the communications management plan. Once the change is approved, the project manager will update the plan and supporting documentation and will distribute the updates to the project team and all stakeholders. This methodology is consistent with the project’s Change Management Plan and ensures that all project stakeholders remain aware and informed of any changes to communications management.

# Communications Management Constraints

All project communication activities will occur within the project’s approved budget, schedule, and resource allocations. The project manager is responsible for ensuring that communication activities are performed by the project team and without external resources which will result in exceeding the authorized budget. Communication activities will occur in accordance with the frequencies detailed in the Communication Matrix in order to ensure the project adheres to schedule constraints. Any deviation of these timelines may result in excessive costs or schedule delays and must be approved by the project sponsor.

ABC Corp. organizational policy also states that only a Vice President or higher level employee may authorize the distribution of confidential information. The project manager is responsible for ensuring that approval is requested and obtained prior to the distribution of any confidential information regarding this project.

# Stakeholder Communication Requirements

As part of identifying all project stakeholders, the project manager will communicate with each stakeholder in order to determine their preferred frequency and method of communication. This feedback will be maintained by the project manager in the project’s Stakeholder Register. Standard project communications will occur in accordance with the Communication Matrix; however, depending on the identified stakeholder communication requirements, individual communication is acceptable and within the constraints outlined for this project.

In addition to identifying communication preferences, stakeholder communication requirements must identify the project’s communication channels and ensure that stakeholders have access to these channels. If project information is communicated via secure means or through internal company resources, all stakeholders, internal and external, must have the necessary access to receive project communications.

Once all stakeholders have been identified and communication requirements are established, the project team will maintain this information in the project’s Stakeholder Register and use this, along with the project communication matrix as the basis for all communications.

# Roles

**Project Sponsor**

The project sponsor is the champion of the project and has authorized the project by signing the project charter. This person is responsible for the funding of the project and is ultimately responsible for its success. Since the Project Sponsor is at the executive level communications should be presented in summary format unless the Project Sponsor requests more detailed communications.

**Program Manager**

The Program Manager oversees the project at the portfolio level and owns most of the resources assigned to the project. The Program Manager is responsible for overall program costs and profitability as such they require more detailed communications than the Project Sponsor.

**Change Control Board**

The Change Control Board is a designated group which is reviews technical specifications and authorizes changes within the organizations infrastructure. Technical design documents, user impact analysis and implementation strategies are typical of the types of communication this group requires.

**Farmers**

There are currently two farmers involved in the project: Jimothy Jenkins and Stevie Smith. As the farmers will be accepting the final deliverable of this project they will be informed of the project status including potential impacts to the schedule for the AI solution that may show up.

**Project Manager**

The Project Manager has overall responsibility for the execution of the project. The Project Manager manages day to day resources, provides project guidance and monitors and reports on the projects metrics as defined in the Project Management Plan. As the person responsible for the execution of the project, the Project Manager is the primary communicator for the project distributing information according to this Communications Management Plan.

**Project Team**

The Project Team is comprised of all persons who have a role performing work on the project. The project team needs to have a clear understanding of the work to be completed and the framework in which the project is to be executed. Since the Project Team is responsible for completing the work for the project they played a key role in creating the Project Plan including defining its schedule and work packages. The Project Team requires a detailed level of communications which is achieved through day to day interactions with the Project Manager and other team members along with weekly team meetings.

**Analysis Team**

The analysis team will be responsible for keeping the consulting team informed of any changes to the testing plan. They will also be responsible for keeping the consulting team informed about any of the farmers’ problems relating to the installed system that have been solved.

**Consulting Team**

The consulting team will be responsible for being the primary communicators to the Farmers when they have an issue. When an issue pops up, the consulting team will report to the analysis team about the problem, and what (or didn’t) solve it.

# Project Team Directory

The following table presents contact information for all persons identified in this communications management plan. The email addresses and phone numbers in this table will be used to communicate with these people.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Role** | **Name** | **Title** | **Organization/ Department** | **Email** | **Phone** |
| **Project Sponsor** | Eric Sommers | State Statistician | NASS | [Eric.sommer@nass.usda.gov](mailto:Eric.sommer@nass.usda.gov) | (406) 441-1240 |
| **Project Manager** | Emmett Pierson | Project Manager | NASS | [Emmett.Pierson@nass.usda.gov](mailto:c.black@abc.com) | (406) 441-1414 |
| **Project Stakeholders** | See Stakeholder Register | See Stakeholder Register | See Stakeholder Register | See Stakeholder Register | See Stakeholder Register |
| **Farmer** | Jimothy Jenkins | Farmer | Farmer | [JJ@icloud.com](mailto:%20JJ@icloud.com) | (406) 417-8121 |
| **Farmer** | Stevie Smith | Farmer | Farmer | [SSmit@gmail.com](mailto:SSmit@gmail.com) | (406) 439-1824 |
| **Consultant** | Billy Bob | Consultant | NASS | [Billy.Bob@nass.usda.gov](mailto:Billy.Bob@nass.usda.gov) | (406) 441-1831 |
| **Consultant** | Billy George | Consultant | NASS | [Billy.George@nass.usda.gov](mailto:Billy.George@nass.usda.gov) | (406) 441-7619 |
| **Consultant** | Billy Greg | Consultant | NASS | [Billy.Greg@nass.usda.gov](mailto:Billy.Greg@nass.usda.gov) | (406) 441-8183 |
| **Analyst** | Riley Smith | Analyst | NASS | [Riley.Smith@nass.usda.gov](mailto:Riley.Smith@nass.usda.gov) | (406) 441-8771 |
| **Analyst** | Riley Harvey | Analyst | NASS | [Riley.Harvey@nass.usda.gov](mailto:Riley.Harvey@nass.usda.gov) | (406) 441-9173 |

# Communication Methods and Technologies

The project team will determine, in accordance with Montana Regulations, the communication methods and technologies based on several factors to include: stakeholder communication requirements, available technologies (internal and external), and organizational policies and standards.

The primary forms of day to day communication for the project team will be handled through teams and phone calls where appropriate. Each of the farmers will be given multiple methods of communication to choose from, the primary methods being email, text, and phone. If the farmer has another preference, adjustments can be made. The consultants will have the ability to visit with the Farmers and communicate face to face, primarily to solve any problems and answer complex questions.

# Communications Matrix

The following table identifies the communications requirements for this project.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Communication Type** | **Objective of Communication** | **Medium** | **Frequency** | **Audience** | **Owner** | **Deliverable** | **Format** |
| Kickoff Meeting | Introduce the project team and the project. Review project objectives and management approach. | * Face to Face | Once | * Project Sponsor * Project Team * Stakeholders | Project Manager | * Agenda * Meeting Minutes | * Soft copy archived on the Team page and project web site |
| Project Team Meetings | Review status of the project with the team. | * Face to Face * Conference Call | Weekly | * Project Team | Project Manager | * Agenda * Meeting Minutes * Project schedule | * Soft copy archived on the Team page and project web site |
| Farmer Updates | Communicate the status of the project with the team, and share solved problems. | * Email | Bi-Weekly | * Farmers | Project Manager | * Project Status Report * Project schedule | * Soft copy archived on the Team page and project web site |
| Monthly Project Status Meetings | Report on the status of the project to management. | * Face to Face * Conference Call | Monthly | * PMO | Project Manager | * Slide updates * Project schedule | * Soft copy archived on the Team page and project web site |
| Project Status Reports | Report the status of the project including activities, progress, costs and issues. | * Email | Monthly | * Project Sponsor * Project Team * Stakeholders * PMO | Project Manager | * Project Status Report * Project schedule | * Soft copy archived on the Team page and project web site |

# Communication Flowchart

The communication flowchart below was created to aid in project communication. This flowchart provides a framework for the project team to follow for this project. However, there may be occasions or situations which fall outside of the communication flowchart where additional clarification is necessary. In these situations the Project Manager is responsible for discussing the communication with the Project Sponsor and making a determination on how to proceed.

A diagram of a flowchart

AI-generated content may be incorrect.

# Guidelines for Meetings

**Meeting Minutes**

Meeting minutes will be distributed within 2 business days following the meeting. Meeting minutes will include the status of all items from the agenda along with new action items and the Parking Lot list.

**Action Items**

Action Items are recorded in both the meeting agenda and minutes. Action items will include both the action item along with the owner of the action item. Meetings will start with a review of the status of all action items from previous meetings and end with a review of all new action items resulting from the meeting. The review of the new action items will include identifying the owner for each action item.

**Meeting Chair Person**

The Chair Person is responsible for distributing the meeting agenda, facilitating the meeting and distributing the meeting minutes. The Chair Person will ensure that the meeting starts and ends on time and that all presenters adhere to their allocated time frames. The Chair Person is usually the project manager, with any changes being acknowledged beforehand.

**Note Taker**

The Note Taker is responsible for documenting the status of all meeting items, maintaining a Parking Lot item list and taking notes of anything else of importance during the meeting. The Note Taker will give a copy of their notes to the Chair Person at the end of the meeting as the Chair Person will use the notes to create the Meeting Minutes.

**Time Keeper**

The Time Keeper is responsible for helping the facilitator adhere to the time limits set in the meeting agenda. The Time Keeper will let the presenter know when they are approaching the end of their allocated time. Typically a quick hand signal to the presenter indicating how many minutes remain for the topic is sufficient.

**Parking Lot**

The Parking Lot is a tool used by the facilitator to record and defer items which aren’t on the meeting agenda; however, merit further discussion at a later time or through another forum.

A parking lot record should identify an owner for the item as that person will be responsible for ensuring follow-up. The Parking Lot list is to be included in the meeting minutes.

# Communication Standards

For this project, AGR will utilize standard organizational formats and templates for all formal project communications. Formal project communications are detailed in the project’s communication matrix and include:

Kickoff Meeting – project team will utilize AGR standard templates for meeting agenda and meeting minutes. Additionally, any slides presented will use the AGR standard slideshow template.

Project Team Meetings – project team will utilize AGR standard templates for meeting agenda and meeting minutes. Additionally, any slides presented will use the AGR standard slideshow template.

Farmer Updates - project team will utilize AGR standard templates for meeting agenda and meeting minutes. Additionally, any slides presented will use the AGR standard slideshow template.

Monthly Project Status Meetings - project team will utilize AGR standard templates for meeting agenda and meeting minutes. Additionally, any slides presented will use the AGR standard slideshow template.

Project Status Reports – project team will utilize AGR standard templates for meeting agenda and meeting minutes. Additionally the standard project status report document, available in the team page, will be used to provide project status.

Informal project communications should be professional and effective but there is no standard template or format that must be used. The platform for such communication would usually be best served by either teams or a phone call, though other methods can be appropriate.

# Communication Escalation Process

Efficient and timely communication is the key to successful project completion. As such, it is imperative that any disputes, conflicts, or discrepancies regarding project communications are resolved in a way that is conducive to maintaining the project schedule, ensuring the correct communications are distributed, and preventing any ongoing difficulties. In order to ensure projects stay on schedule and issues are resolved, AGR will use its standard escalation model to provide a framework for escalating communication issues. The table below defines the priority levels, decision authorities, and timeframes for resolution.

|  |  |  |  |
| --- | --- | --- | --- |
| **Priority** | **Definition** | **Decision Authority** | **Timeframe for Resolution** |
| Priority 1 | Major impact to project or business operations. If not resolved quickly there will be a significant adverse impact to revenue and/or schedule. | Vice President or higher | Within 4 hours |
| Priority 2 | Medium impact to project or business operations which may result in some adverse impact to revenue and/or schedule. | Project Sponsor | Within one business day |
| Priority 3 | Slight impact which may cause some minor scheduling difficulties with the project but no impact to business operations or revenue. | Project Manager | Within two business days |
| Priority 4 | Insignificant impact to project but there may be a better solution. | Project Manager | Work continues and any recommendations are submitted via the project change control process |

\*\* NOTE: Any communication including sensitive and/or confidential information will require escalation to VP level or higher for approval prior to external distribution.

# Glossary of Communication Terminology

|  |  |
| --- | --- |
| Term | Definition |
| Communication | The effective sending and receiving of information. Ideally, the information received should match the information sent. It is the responsibility of the sender to ensure this takes place. |
| Stakeholder | Individuals or groups involved in the project or whose interests may be affected by the project’s execution or outcome. |
| Communications Management Plan | Portion of the overall Project Management Plan which details how project communications will be conducted, who will participate in communications, frequency of communications, and methods of communications. |
| Escalation | The process which details how conflicts and issues will be passed up the management chain for resolution as well as the timeframe to achieve resolution. |

Sponsor Acceptance

Approved by the Project Sponsor:

Date:

Eric Sommers

State Statistician