



United States Department of Agriculture
Natural Resources Conservation Service

***Vegetation
Design Tool***

**Functional
Requirements
Specification
(FRS)**

Office of the Chief Information
Officer
Natural Resources Conservation
Service
Washington, D.C.

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Revision History

Version #	Implemented By	Revision Date	Approved By	Approval Date	Description of Change
1.0	Julie Degner	09/30/2015			Initial Draft containing as much content as possible when work stopped on 9/30/15.

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1 Overview

1.1 Purpose

The purpose of this document is to define the business requirements for a new web based software solution which provides vegetation specifications. The solution will assist conservation planners and consultants in selecting appropriate plant species for conservation practices and resource concerns within the parameters of the local site conditions for selected land. This is a reengineering effort. The former version of VegSpec was retired a number of years ago.

It includes user requirements (what the user does), functional requirements (what the system does), data requirements and business rules. See Appendix C – Requirement Specification Approach for a full definition of requirement artifacts used in this document and their inter-dependencies. See Appendix D – Document Conventions for background on document organization and the various conventions used within. This document is further supported by the NRCS Requirements Development and Management Plan (Reference 1).

NOTE: The term “VegSpec” in this document is synonymous with “Vegetation Design Tool”.

1.2 Scope

The intent of this document is to identify the detailed business requirements for a new, re-engineered version of the VegSpec application in sufficient detail to support the following:

- System design efforts by the development team
- System development planning
- Test planning & preparation by the quality assurance team][
- Revised Level Of Effort (LOE) and cost for remaining phases

This document defines the detailed business requirements for phase 1 of VegSpec. The contents of phase 1 are defined in the In Scope section below.

1.2.1 In Scope

- Full support for the General Public users
- Full support for NRCS users excluding integration to a TA system
- Full support for Managing Vegetative Reference Data

1.2.2 Out of Scope

- Integration with a Technical Assistance (TA) application.

1.3 Risks and Dependencies

1.3.1 Risks

- Work stopped before the requirements were fully specified and reviewed. When work resumes time will need to be allocated to finish the work. Note: it is feasible that these requirements can be finished in parallel with system design.
- Identification of the source system for climate data. ClIGEN is under consideration. However, this likely needs to be assessed when work continues on this project as NRCS may have other options available at that time.

1.3.2 Dependencies

- Solution Implemented as a public Web - Based Application and user interface design must conform to Public Affairs Division policy for public facing applications.
- See section 2.1.3 for a list of the dependencies on external systems.

1.4 Intended Audience

This document is intended to be used by the development team including project management, developers, architecture, testing, Production Support Operations (PSO, Product and Process Quality Assurance (PPQA) and security. These requirements will also be reviewed and approved by the business sponsor.

1.5 Status of Requirements

These requirements were gathered and specified during fiscal year 2015. The phase 1 requirements were not fully specified when stopped at the end of the fiscal year. The Overview subsection found throughout the document contains a subsection called 'Missing Requirement Detail'. Here you will find specifics about what detail is known to be missing.

In addition to the missing detail in the requirements themselves, the review process is also incomplete. The document needs to be reviewed by:

- Business SMEs
- All of the groups within the development team

Note: The requirements in the Functional Requirement and Data Requirement sections were exported from the Rational Requirements Composer tool (RRC). The requirements there have been developed in a pilot area. These requirements need to be moved to a new project in RRC specifically for VegSpec and then they should continue to be managed from there. The review and approval process should be completed within RRC as well. This document serves as a point in time snap shot of the requirements.

1.6 Next Steps

1. Complete these requirements, along with the review & approval
2. In parallel, begin work on the user interface wire frames so the approval process for public facing applications be started
3. In parallel, begin work on the interface specifications for external systems

2 Functional Requirements

2.1 VegSpec Top Level

2.1.1 Overview

2.1.1.1 Key Points - Filtering

The core of the VegSpec Planning Tool is the matching done on plant characteristics. Matching is done by matching plants and/or plant characteristics to:

- Site conditions such as soil, climate, etc.
- Approved state plant lists
- The purpose of the plan, such as, conservation practice and resource concerns
- Additional plant characteristics provided by the user

The plant filtering falls into three general types.

- Primary – this refers to filtering that is done to eliminate plants from the plant list that is available to the user, that is, plants that are eliminated via primary filtering are never seen by the user. Primary filtering includes matching on site soil and climate characteristics, plant adaptability based on MLRA or the PLANTS state distribution lists, authorized plants for the state when the user is an NRCS user, and plan purpose selections such as practice, resource concern or general design goal, for example, if the design goal is a temporary cover only plants suitable for that purpose will be on the list.
- Close Match – this refers to filtering that is done to catch borderline plants, for example, plants that are close on meeting precipitation requirements but are not within the specified range. Even though these plants would have been excluded by primary filtering, they are left in the list but marked as being a close match. Close matching also identifies the specific characteristic(s) that resulted in the close match designation. Close matching is done on a subset of soil and climate characteristics.
- Secondary – refers to additional, optional filtering that can be requested by the user. The user enters additional plant characteristics and the plant list is further filtered. Plants that are eliminated via these secondary filters are left in the plant list but are tagged as having been ‘soft’ eliminated. This allows the user to see the effects of applying a given secondary filter. Secondary filters are additional plant characteristics such as Shade Tolerance, Drought Tolerance, etc.

The general goal was to do enough filtering to get a reasonable plant list from which the user can make choices but to not over filter so that too many plants are eliminated from the list.

The general approach used to define the matching requirements and rules in this specification are:

- There will be an entity defined which serves as a collection of attributes that go together for matching, e.g., Soils Primary Attributes.
- This entity will be associated with the attributes that part of the given matching collection, e.g., Soil Salinity, Soil pH, etc.
- Each attribute will be associated with a business rule that specifies the matching logic, e.g., Filter Plant by Soil Texture
- Each of these individual matching rules are associated with an overall valid value rule for the association, e.g., Soil – Plant Association – Valid Values
- This overall valid value rule will also be associated to other rules such as whether all matches are required, e.g., Plant – Primary Soil Characteristics – Any Match
- This overall valid value rule will also be associated to a functional requirement for performing the filtering, e.g., System Filter Plants by Soils

2.1.1.2 Key Points - General Structure

Key aspects of the general structure of VegSpec are:

- VegSpec is highly dependent on external systems from which it gathers information.
- This version does not persist any information to a common data store, but does include the ability for local saves by the user.
- The user structure is relatively straightforward, not complex.
- VegSpec itself has 2 primary components:
 - Planning Tool – the tool used for vegetative planning
 - Reference Data Tool – the tool used to manage vegetative reference data

The planning process has the following general steps:

- Identifying an Area of Interest (AOI), that is, the physical location of the land where the plan will be implemented
 - Used to intersect with Climate, Soils, MLRA and State/County layers
- Identifying various purposes for the plan
 - For NRCS Users, Practice, Resource Concerns & Design Goals
 - For General Users, Purpose, Objectives & Design Goals
- System application of primary and close match filters
- Optional application of secondary filters

- Plant selection
 - Standard mixes or custom
 - Determination of plant material quantities
- Identifying instructions to include with the plan
 - Such as, amendments, narratives for preparation, operations & maintenance, design sketches, etc.
- Identifying any other information needed for the plan such as producer, farm name, etc.
- Generation of the plan document

In addition, the user can save their session for reuse or completion at a later time.

The Reference Data Tool is used to manage national and state vegetative data.

2.1.1.3 Missing Requirement Detail

- User and Functional (System) requirements are defined that correlate to tasks on the process diagrams. It is possible that there are no corresponding requirements or business rules for some of the decision points.

2.1.1.4 Items Requiring Attention from Business SMEs

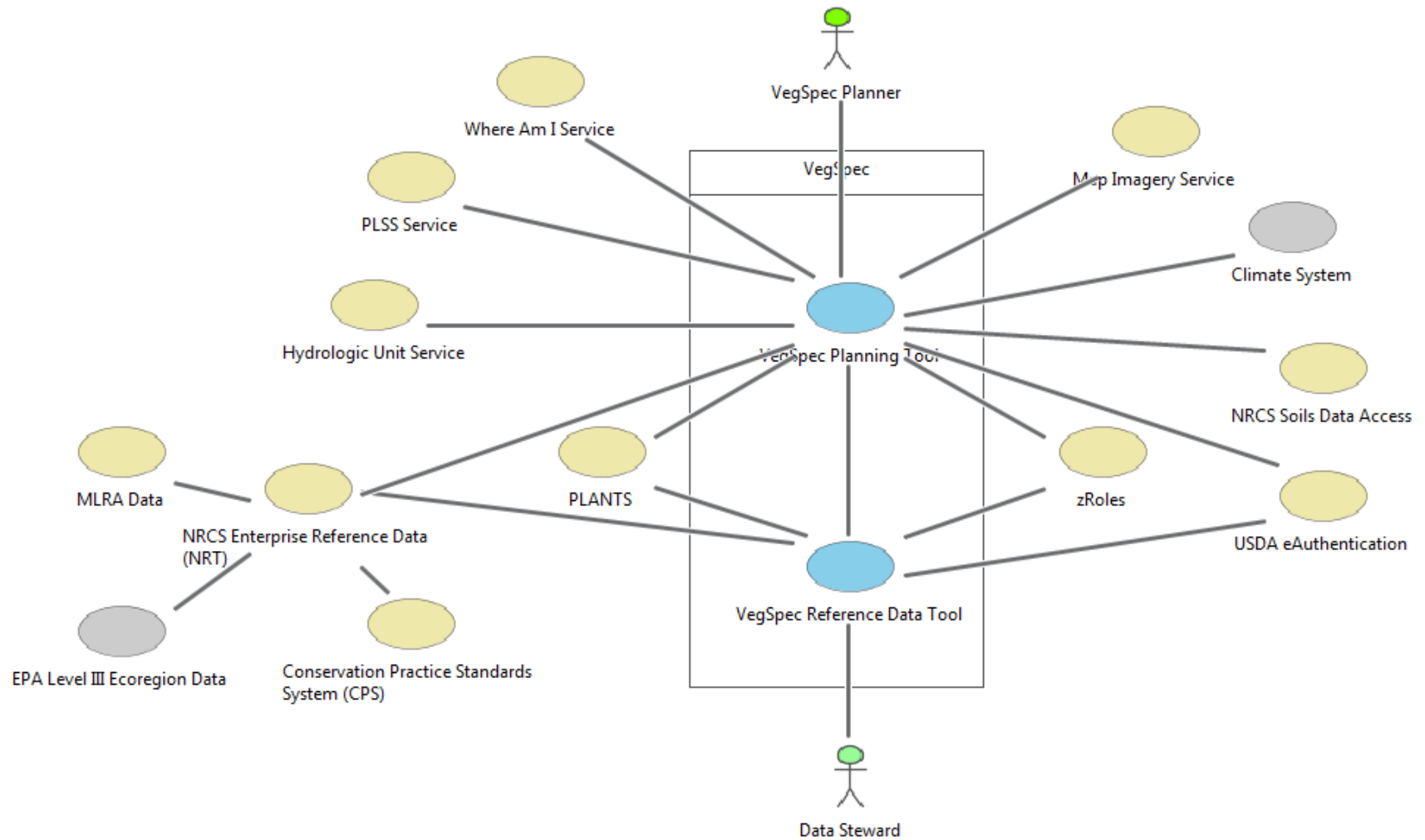
- None known

2.1.2 Context Diagram

ID	Artifact Type	Name	Diagram	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4137 2	Use Case Diagram	Context Diagram	See Diagram	43681: VegSpec Planner 41389: Data Steward 41405: NRCS Soils Data Access 43953: Conservation Practice Standards System (CPS) 41399: VegSpec Planning Tool 41357: PLANTS 41393: NRCS Enterprise Reference Data (NRT) 41391: Climate System 44081: USDA eAuthentication 44154: Map Imagery Service 44150: MLRA Data 44168: Where Am I Service 44151: Hydrologic Unit Service 44153: PLSS Service 41406: VegSpec Reference Data Tool 41337: zRoles 44152: EPA Level III Ecoregion Data	Must	1	Draft	VegSpec

Color key for Context Diagram:

- Blue – the VegSpec Tools being built
- Gold – external systems that are known and exist
- Gray – external systems that are new to NRCS and / or source system still needs to be finalized



2.1.3 System Actors

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4139 1	Actor - System	Climate System	<p>This is a system that is to provision climate data in a format suitable for consumption by the various NRCS systems that use climate data.</p> <p>Owner: NRCS</p> <p>Status: New</p> <p>References: None</p>		Must	1	Draft	SysNRCS
4395 3	Actor - System	Conservation Practice Standards System (CPS)	<p>NRCS maintains their conservation practices in the Conservation Practice Standards System (CPS).</p> <p>Owner: NRCS</p> <p>Status: Existing</p> <p>References: None</p>		Must	1	Draft	SysNRCS

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4415 2	Actor - System	EPA Level III Ecoregion Data	<p>EPA Level III Ecoregion data is available for download. This data will be used to establish a reference layer.</p> <p>Ecoregions denote areas of general similarity in ecosystems and in the type, quality, and quantity of environmental resources. They are designed to serve as a spatial framework for the research, assessment, management, and monitoring of ecosystems and ecosystem components. By recognizing the spatial differences in the capacities and potentials of ecosystems, ecoregions stratify the environment by its probable response to disturbance. These general purpose regions are critical for structuring and implementing ecosystem management strategies across federal agencies, state agencies, and nongovernment organizations that are responsible for different types of resources within the same geographical areas.</p> <p>Owner: EPA</p> <p>Status: Will need to establish as an accessible layer, most likely in the NRT.</p> <p>References:</p> <ul style="list-style-type: none"> Public Website: EPA Level III Ecoregion Information 		Must	1	Draft	SysEPA

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4415 1	Actor - System	Hydrologic Unit Service	<p>A service for accessing Hydrologic Unit layer data. The United States is divided and sub-divided into successively smaller hydrologic units which are classified into four levels: regions, sub-regions, accounting units, and cataloging units. The hydrologic units are arranged or nested within each other, from the largest geographic area (regions) to the smallest geographic area (cataloging units). Each hydrologic unit is identified by a unique hydrologic unit code (HUC) consisting of two to eight digits based on the four levels of classification in the hydrologic unit system.</p> <p>Owner: NGMC (National Geospatial Management Center)</p> <p>Status: Available as a reference layer from NGMC.</p> <p>References:</p> <ul style="list-style-type: none"> Public Website: Hydrologic Unit Information 		Must	1	Draft	SysNGMC
4415 0	Actor - System	MLRA Data	<p>MLRS data is available for download. This data will be used to update the current NRCS MLRA data in the NRT.</p> <p>Major land resource areas (MLRAs) are geographically associated land resource units (LRUs). Identification of these large areas is important in statewide agricultural planning and has value in interstate, regional, and national planning.</p> <p>Owner: Data.gov likely has the most current version.</p> <p>Status: Updating needed. Current version in the NRT is not up to date.</p> <p>References:</p> <ul style="list-style-type: none"> Public Website: Data.gov MLRA Information Public Website: NRCS MLRA Information 		Must	1	Draft	SysNRCS

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44154	Actor - System	Map Imagery Service	<p>Service for accessing map imagery.</p> <p>Owner: NGMC (National Geospatial Management Center)</p> <p>Status: Available from NGMC.</p> <p>References: None</p>		Must	1	Draft	SysNGMC
41393	Actor - System	NRCS Enterprise Reference Data (NRT)	<p>NRCS maintains a set of reference data that is available for use across the enterprise.</p> <p>Owner: NRCS</p> <p>Status: Existing</p> <p>References: None</p>	<p>43953: Conservation Practice Standards System (CPS)</p> <p>44150: MLRA Data</p> <p>44152: EPA Level III Ecoregion Data</p>	Must	1	Draft	SysNRCS

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
41405	Actor - System	NRCS Soils Data Access	<p>Soil Data Access is the name of a suite of web services and applications whose purpose is to meet requirements for requesting and delivering soil survey spatial and tabular data that are not being met by the current Web Soil Survey and Geospatial Data Gateway websites. These requirements include:</p> <ol style="list-style-type: none"> 1) Provide a way to request data for an ad hoc area of interest of any size; 2) Provide a way to obtain data in real-time; 3) Provide a way to request selected tabular attributes; 4) Provide a way to return tabular data where the organization of that data doesn't have to mirror that of the underlying source database 5) Provide a way to bundle results by request, rather than by survey area. <p>Soils data come from the SSURGO database. The SSURGO database contains information about soil as collected by the National Cooperative Soil Survey over the course of a century.</p> <p>Owner: NRCS</p> <p>Status: Existing</p> <p>References:</p> <ul style="list-style-type: none"> • Public Website: NRCS Soil Data Access 		Must	1	Draft	Soils,SysNRCS
41357	Actor - System	PLANTS	<p>The PLANTS Database provides standardized information about the vascular plants, mosses, liverworts, hornworts, and lichens of the U.S. and its territories.</p> <p>Owner: NRCS</p> <p>Status: Existing</p> <p>References:</p> <ul style="list-style-type: none"> • Public Website: Plants 		Must	1	Draft	SysNRCS

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44153	Actor - System	PLSS Service	<p>Service for accessing PLSS layer data. The Public Land Survey System (PLSS) is a way of subdividing and describing land in the United States.</p> <p>Owner: NGMC (National Geospatial Management Center)</p> <p>Status: Available as a reference layer from NGMC.</p> <p>References:</p> <ul style="list-style-type: none"> Public Website: PLSS Information 		Must	1	Draft	SysNGMC
44081	Actor - System	USDA eAuthentication	<p>USDA eAuthentication is the primary authentication system for NRCS.</p> <p>Owner: USDA</p> <p>Status: Existing</p> <p>References: None</p>		Must	1	Draft	SysUSDA
44082	Actor - System	VegSpec	<p>VegSpec is a web based software solution which provides tools for vegetation planning and for managing vegetative reference data.</p> <p>Owner: NRCS</p> <p>Status: New (there was an earlier version of VegSpec which had been deactivated a number of years ago. This is a re-engineering effort.)</p> <p>References: None</p>	<p>41399: VegSpec Planning Tool</p> <p>41406: VegSpec Reference Data Tool</p>	Must	1	Draft	SysNRCS

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
41399	Actor - System	VegSpec Planning Tool	<p>The VegSpec Planning Tool is a web based software solution which provides vegetation specifications. The solution assists conservation planners and consultants in selecting appropriate plant species for conservation practices and resource concerns within the parameters of the local site conditions for selected land.</p> <p>Owner: NRCS</p> <p>Status: New (there was an earlier version of VegSpec which had been deactivated a number of years ago. This is a re-engineering effort.)</p> <p>References: None</p>		Must	1	Draft	SysNRCS
41406	Actor - System	VegSpec Reference Data Tool	<p>The Vegetative Reference Data Tool is a web based application for managing the vegetative reference data at different levels such as, national and state.</p> <p>Owner: NRCS</p> <p>Status: New</p> <p>References: None</p>		Must	1	Draft	SysNRCS
44168	Actor - System	Where Am I Service	<p>Service that provides a set of location attributes for a given spatial latitude and longitude.</p> <p>Owner: NRCS</p> <p>Status: Exists</p> <p>References:</p> <ul style="list-style-type: none"> Public Website: Production "Where Am I" (aka WAI) Geoservices test page Public Website: Production "Where Am I" (aka WAI) Geoservices GeoAttributeNames test page 		Must	1	Draft	SysNRCS

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
41337	Actor - System	zRoles	<p>zRoles is the primary authorization system for NRCS. It provides Role Centric Attribute-Based Access Control (RABAC).</p> <p>Owner: NRCS</p> <p>Status: Existing</p> <p>References:</p> <ul style="list-style-type: none"> CoLab: zRoles 		Must	1	Draft	Authorization, SysNRCS

2.1.4 Person Actors

Person actors have been defined hierarchically allowing the assignment of user and functional requirements to a single actor to determine authorization, in almost all cases. The hierarchy is as follows:

- VegSpec User – any user that accesses VegSpec
 - VegSpec Planner – a collection of privileges that can be done by all planners
 - NRCS Planner – a collection of privileges that can only be done by NRCS planners
 - General Planner – a collection of privileges that can only be done by General planners
 - General Planner – Authenticated¹ – a collection of privileges that can only be done by authenticated general planners
 - General Planner – Unauthenticated1 - a collection of privileges that can only be done by unauthenticated general planners
 - Data Steward – a collection of privileges that can be done by all data stewards
 - Data Steward – Author – a collection of privileges that can be done by Authors
 - Data Steward – Approver – a collection of privileges that can be done by Approvers

¹ The only difference between an Authenticated & Unauthenticated planner at this time is the source of the planner information, when authenticated it can be retrieved from eAuth.

The association of a user or functional requirement to a person actor(s) is what determines authorization requirements.

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
41389	Actor - Person	Data Steward	<p>This user is an NRCS staff member that is responsible for managing vegetative reference data.</p> <p>User Type:</p> <ul style="list-style-type: none"> NRCS Employee - Level 2 NRCS Affiliate - Level 2 <p>Jurisdiction :</p> <ul style="list-style-type: none"> State Records National Records <p>Assignment Policy: This actor is typically assigned to ... TBD.</p>	<p>44447: Data Steward - Author</p> <p>44448: Data Steward - Approver</p>	Must	1	Draft	DataSteward,TBD
44448	Actor - Person	Data Steward - Approver	<p>This user is an NRCS staff member that is responsible for approving modifications to vegetative reference data.</p> <p>User Type:</p> <ul style="list-style-type: none"> NRCS Employee - Level 2 NRCS Affiliate - Level 2 <p>Jurisdiction :</p> <ul style="list-style-type: none"> State Records National Records <p>Assignment Policy: This actor is typically assigned to ... TBD.</p>		Must	1	Draft	DataSteward

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4444 7	Actor - Person	Data Steward - Author	<p>This user is an NRCS staff member that is responsible for authoring modifications to vegetative reference data.</p> <p>User Type:</p> <ul style="list-style-type: none"> NRCS Employee - Level 2 NRCS Affiliate - Level 2 <p>Jurisdiction :</p> <ul style="list-style-type: none"> State Records National Records <p>Assignment Policy: This actor is typically assigned to ... TBD.</p>		Must	1	Draft	DataSteward
4388 4	Actor - Person	General Planner	<p>A General Planner may be authenticated or unauthenticated. When authenticated they have an unmanaged eAuth account.</p> <p>User Type:</p> <ul style="list-style-type: none"> Customer - Level 2 General Public - Level 2 General Public - Level 1 Unauthenticated <p>Jurisdiction : N/A</p> <p>Assignment Policy: These users will typically be the general public but can be anyone that uses VegSpec without authenticating or authenticating with an unmanaged account.</p>	<p>43835: General Planner - Authenticated</p> <p>43585: General Planner - Unauthenticated</p>	Must	1	Draft	Planner

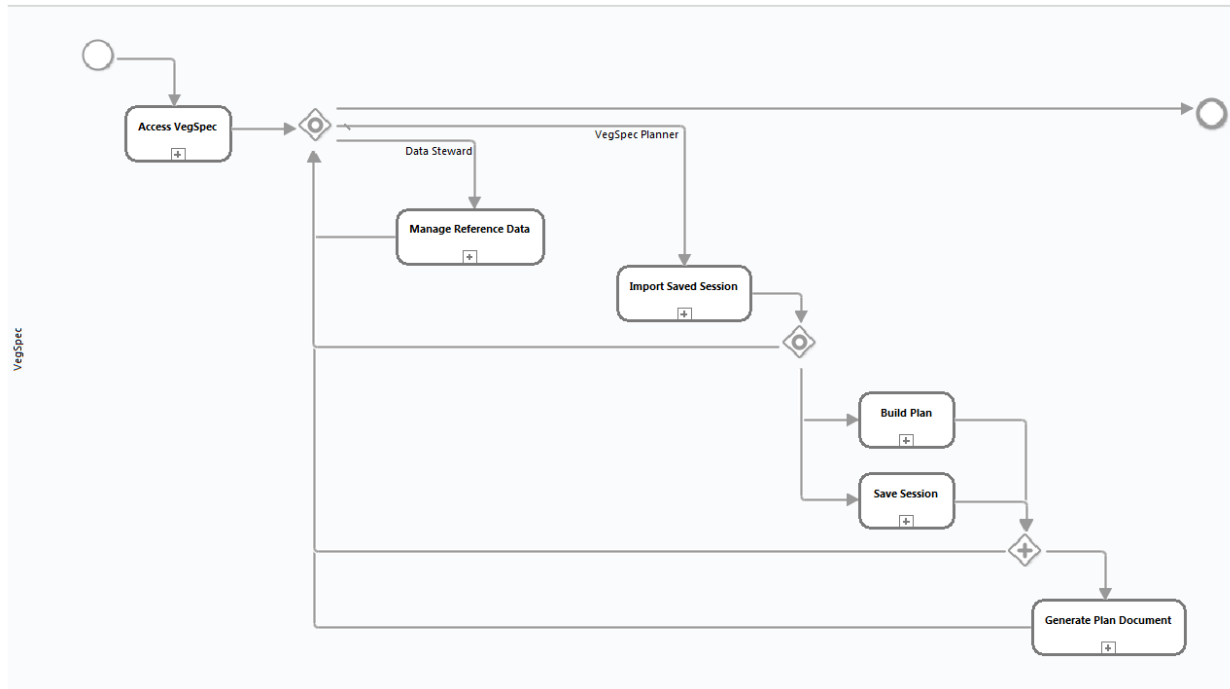
ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43835	Actor - Person	General Planner - Authenticated	<p>Any user that authenticates and has an unmanaged eAuth account. The purpose of this actor is to provide access to profile data stored with a user's account in eAuth. Therefore, eAuth account level does not matter and linkage to SCIMS does not matter as this information is not used.</p> <p>User Type:</p> <ul style="list-style-type: none"> • Customer - Level 2 • General Public - Level 2 • General Public - Level 1 <p>Jurisdiction : N/A</p> <p>Assignment Policy: N/A</p>		Must	1	Draft	Planner
43585	Actor - Person	General Planner - Unauthenticated	<p>A user of VegSpec that does not go through authentication. These include the general public but can also be NRCS staff who access VegSpec without logging in.</p> <p>User Type:</p> <ul style="list-style-type: none"> • Unauthenticated <p>Jurisdiction : N/A</p> <p>Assignment Policy: N/A</p>		Must	1	Draft	Planner

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43583	Actor - Person	NRCS Planner	<p>Any user that authenticates and has a level 2 managed account that is either an NRCS Employee or NRCS Affiliate and uses VegSpec in a mode that is not integrated with the TA application (CST or CD).</p> <p>User Type:</p> <ul style="list-style-type: none"> NRCS Employee - Level 2 NRCS Affiliate - Level 2 <p>Jurisdiction : N/A</p> <p>Assignment Policy: N/A</p>		Must	1	Draft	Planner
43681	Actor - Person	VegSpec Planner	<p>Any user of the VegSpec Planning component.</p> <p>For purposes within these requirements the actor VegSpec Planner will be used for all features that can be done by any of different types of planners. Otherwise the specific actor will be referenced.</p>	<p>43884: General Planner</p> <p>43583: NRCS Planner</p>	Must	1	Draft	Planner
43682	Actor - Person	VegSpec User	<p>Any user of the VegSpec application, both planners and data stewards.</p> <p>For purposes within these requirements the actor VegSpec User will be used for all features that can be done by any user. Otherwise the specific actor will be referenced.</p>	<p>43681: VegSpec Planner</p> <p>41389: Data Steward</p>	Must	1	Draft	DataSteward,Planner

2.1.5 Process Diagram

ID	Artifact Type	Name	Diagram	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43826	Process Diagram	VegSpec Workflow	See Diagram	41437: Access VegSpec Workflow 44367: Session Reuse Workflow 44380: Manage Reference Data Workflow 44351: Generate Plan Document Workflow 43828: Build Plan Workflow	Must	1	Draft	VegSpec

The top level process view of VegSpec shows several subprocesses, each of which are broken out in subsequent sections of the document.



2.1.6 Requirements

None at this level.

2.2 Access Requirements

2.2.1 Overview

2.2.1.1 Key Points

- The planning application will be available to the public so unauthenticated access is supported along with authenticated access.

2.2.1.2 Missing Requirement Detail

- None known

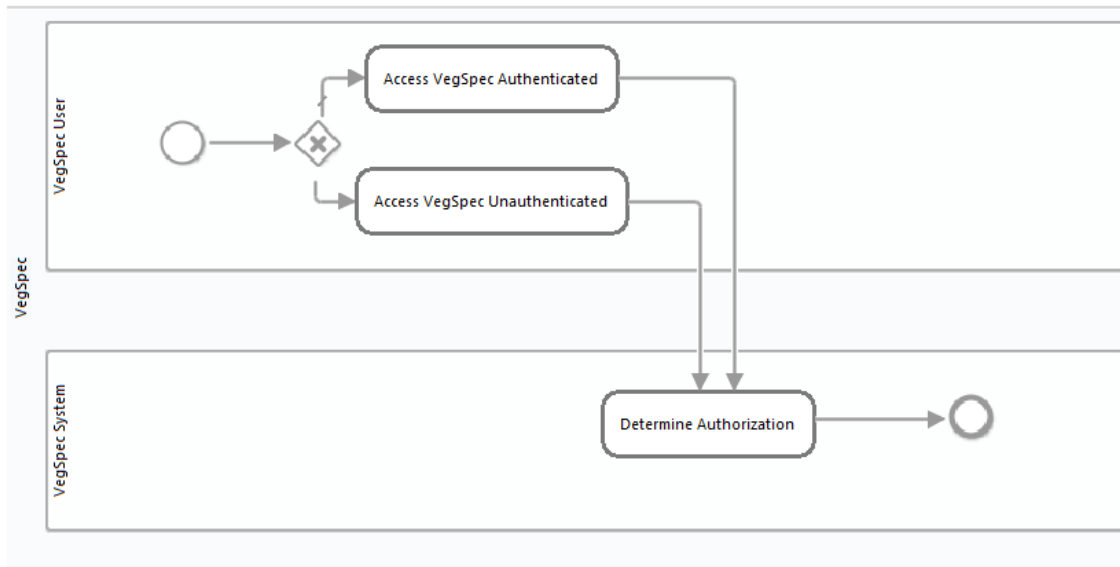
2.2.1.3 Items Requiring Attention from Business SMEs

- None known

2.2.2 Process Diagram

ID	Artifact Type	Name	Diagram	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4143 7	Process Diagram	Access VegSpec Workflow	See Diagram	42098: Unauthenticated User Access 42099: System Determine Authorization 42097: Authenticated User Access	Must	1	Draft	Authentication,Authorization

This diagram depicts the process of accessing VegSpec. At the end of this process, the authorized roles for the user are known.



2.2.3 Requirements

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Requirement Status	Tags
42098	User Requirement	Unauthenticated User Access	A user shall be able to access VegSpec without authenticating.	43682: VegSpec User	Must	1	Draft	Authentication
42097	User Requirement	Authenticated User Access	A user shall be able to access VegSpec in an authenticated mode.	44081: USDA eAuthentication 43682: VegSpec User	Must	1	Draft	Authentication
42099	Functional Requirement	System Determine Authorization	The system shall determine the authorization rights of VegSpec Users.	43682: VegSpec User 44450: Role - Valid Jurisdictions 44077: User - Role Association - Valid Values 41337: zRoles	Must	1	Draft	Authorization

2.3 Building the Plan

2.3.1 Overview

2.3.1.1 Key Points

- This section contains a process diagram that depicts the top level subprocesses needed to build a plan. Each subprocess will be broken out in later sections.

2.3.1.2 Missing Requirement Detail

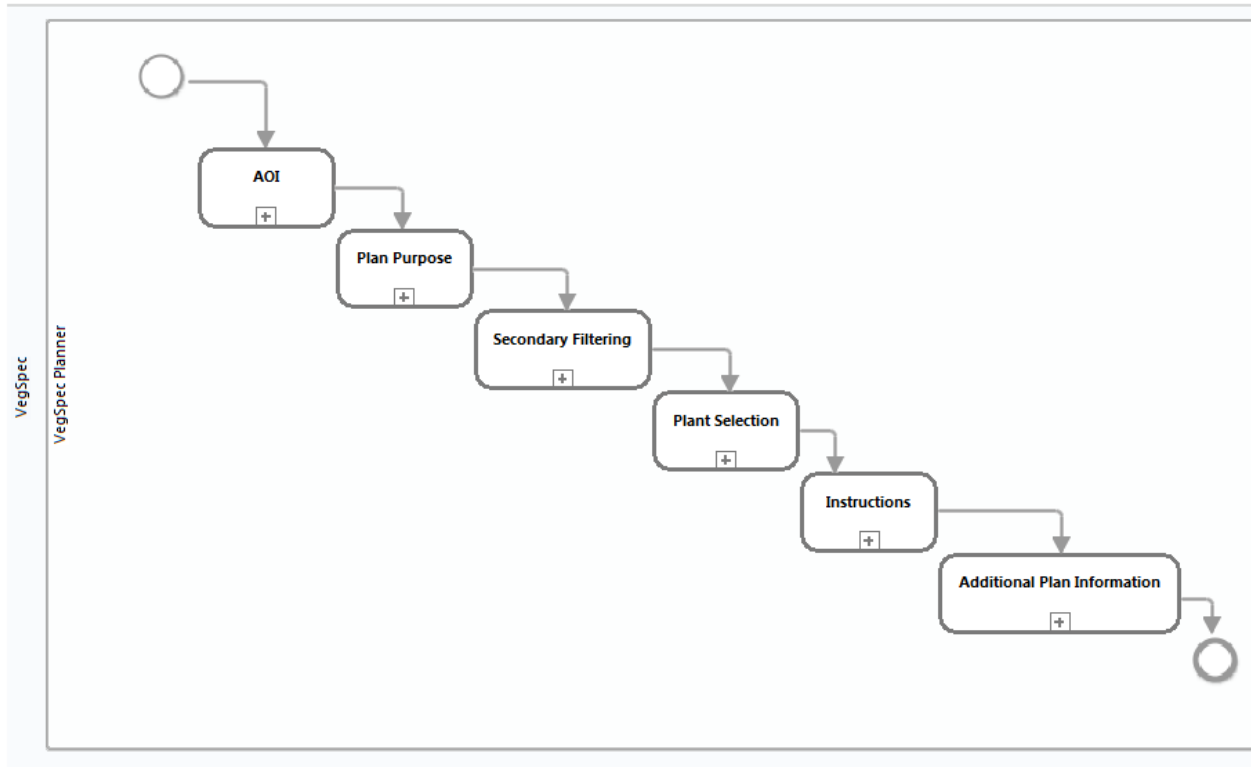
- As a user builds a plan and navigates forward through the plan they will also want to navigate back to a previous point. Requirements have not been specified that deal with back navigation. Consideration needs to be given to the rules about what happens when the user starts to go forward again, what data needs to be recalculated, what entries can be saved so the user does not need to re-enter them, etc. Some of these rules likely have application to the user experience after they reload a saved session.
- The primary focus of these requirements has been on the requirements needed for filtering, how characteristics are matched, what is the general flow of the application, etc. But definition of attributes needed just for view purposes is missing, things as simple as a name for a plant.

2.3.1.3 Items Requiring Attention from Business SMEs

- Definition of requirements in regards to back navigation defined in the Missing Requirement Detail section above.
- Definition of the attributes needed for view only purposes.

2.3.2 Process Diagram

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43828	Process Diagram	Build Plan Workflow	See Diagram	42142: AOI Workflow 44232: Plant Selection Workflow 44277: Instructions Workflow 43846: Secondary Filtering Workflow 44344: Additional Plan Info Workflow 43837: Plan Purpose Workflow	Must	1	Draft	Plan



2.3.3 Requirements

None at this level.

2.4 AOI Building & Filtering

2.4.1 Overview

2.4.1.1 Key Points

- There are requirements for creating an AOI as well as the underlying map requirements
- The system will calculate the sizes based on geometry but the user must enter the actual sizes to be used for planning purposes
- In addition, to the typical polygon type features the user can also create an area by drawing a line and entering a width for the line. The user will also designate the positioning of the width, that is, whether it is center on the line or on one side or another. This is referred to as a 'Line Polygon'.
- Spatial intersection is used to determine potential site characteristics
 - When spatial intersection yields more than one result the user must make the final selection
- The requirements for filtering plants by these AOI based site characteristics are included in this section. This includes both primary and close match filtering.
- When a site has been sufficiently disturbed, the user will have to provide the soil characteristic values

2.4.1.2 Missing Requirement Detail

- Handling of boundary cases, e.g., what to do if no soil or climate data is found via spatial intersection
- Identification of attributes that may be needed for view only purposes

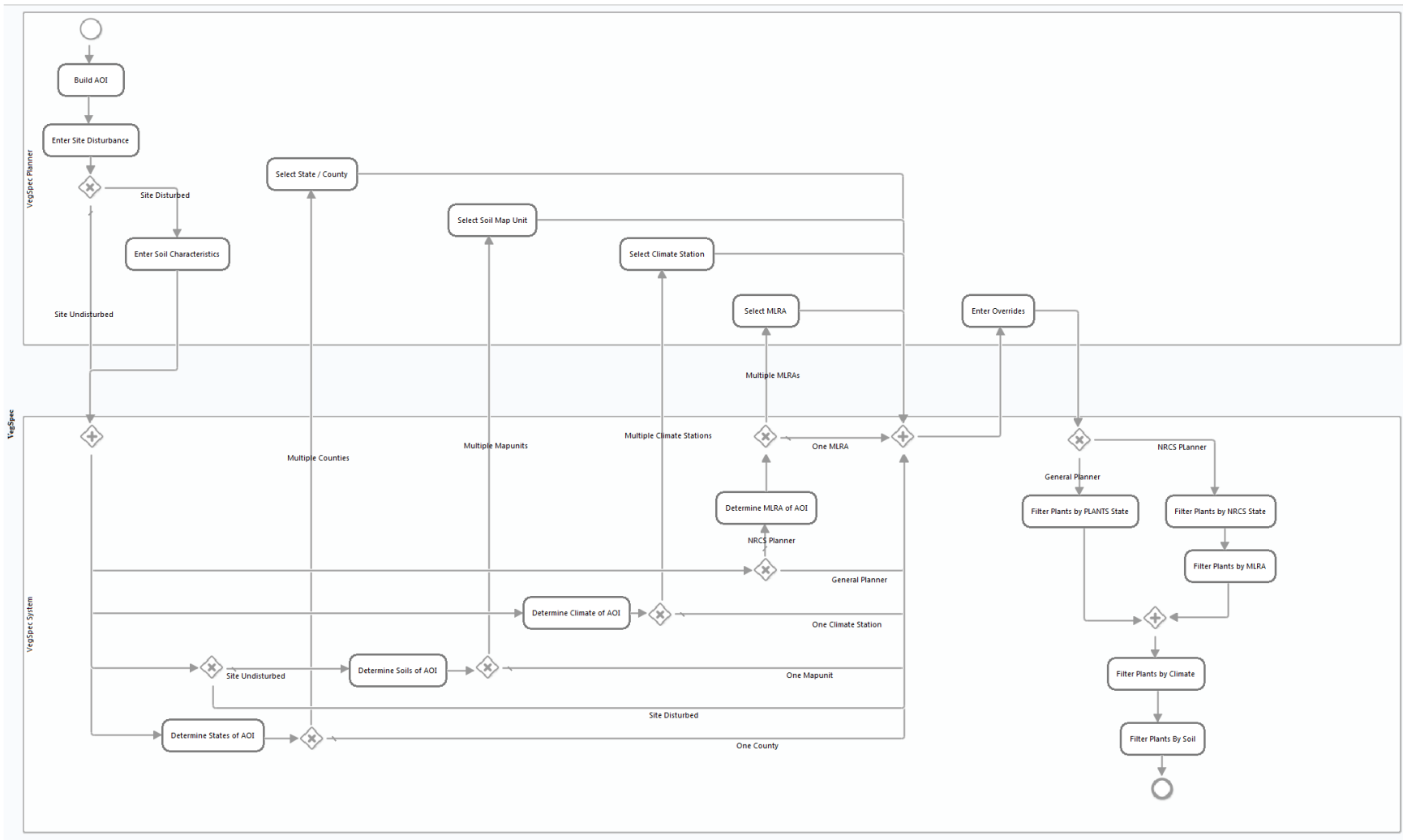
2.4.1.3 Items Requiring Attention from Business SMEs

- For the use case where the user draws a line and enters a width is the term 'Line Polygon' sufficient or correct? Is there an official 'GIS' term for this that should be used?

2.4.2 Process Diagram

ID	Artifact Type	Name	Diagram	Link To ²	Business Priority	Planned Business Phase	Req Status	Tags
4214 2	Process Diagram	AOI Workflow	See Diagram	43860: System Filter Plants by Climate 43857: System Filter Plants by NRCS State 43854: System Determine Soils of AOI 43886: User Enter Soil Disturbance 43858: System Filter Plants by MLRA 43999: User Enter Overrides 43855: System Determine Climate of AOI 43885: System Filter Plants by PLANTS State 43848: User Select MLRA 43887: User Enter Soil Characteristics 43847: User Select State / County 43849: User Select Soil Mapunit 43852: System Determine States / Counties of AOI 43859: System Filter Plants by Soils 43850: User Select Climate Station 43853: System Determine MLRAs of AOI	Must	1	Draft	AOI

² The 'Build AOI' task in the diagram was not mapped to related user and/or functional requirements so these are not shown in this list.



2.4.3 Requirements

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Requirement Status	Tags
43999	User Requirement	User Enter Overrides	A user can optionally override values for attributes that allow override.	43681: VegSpec Planner 43998: Soils Override Attributes	Must	1	Draft	Override
43887	User Requirement	User Enter Soil Characteristics	A user must provide values for the primary soil characteristics for an AOI site where the soil has been disturbed.	43681: VegSpec Planner 43890: Soil Primary Attributes	Must	1	Draft	Soils
43886	User Requirement	User Enter Soil Disturbance	A user must indicate if the soils at the AOI site are disturbed or undisturbed.	43681: VegSpec Planner 43891: Soil Disturbance Indicator	Must	1	Draft	Soils

2.4.3.1 Map Requirements

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Requirement Status	Tags
42159	User Requirement	User Search by UTM	The VegSpec Planner shall be able to zoom to a specified set of UTM coordinates.	43681: VegSpec Planner	Must	1	Draft	Map,Search
42145	User Requirement	User Pan on Map	The VegSpec Planner shall be able pan the view of the map.	43681: VegSpec Planner	Must	1	Draft	Map,Navigation
42152	User Requirement	User Set Default Map Extent	The VegSpec Planner shall be able to define the default map extent to be used when the map is first displayed.	43681: VegSpec Planner	Must	1	Draft	Extent,Map
42148	User Requirement	User Select Map Extent	The VegSpec Planner shall be able to select the map extent.	43681: VegSpec Planner 42154: Map Extent	Must	1	Draft	Extent,Map
42156	User Requirement	User Zoom to Default Map Extent	The VegSpec Planner shall be able to zoom to the default map extent.	43681: VegSpec Planner	Must	1	Draft	Map,Navigation
42149	User Requirement	User Control Visible Layers	The VegSpec Planner shall be able to control which map layers are visible.	43681: VegSpec Planner	Must	1	Draft	Layer,Map
42161	User Requirement	User Search by 8 Digit HUC	The VegSpec Planner shall be able to zoom to a specified 8-digit hydrologic unit.	43681: VegSpec Planner	Must	1	Draft	Map,Search
42160	User Requirement	User Search by PLSS	The VegSpec Planner shall be able to zoom to a specified PLSS section or township.	43681: VegSpec Planner	Must	1	Draft	Map,Search
42146	User Requirement	User Zoom to AOI Extent	The VegSpec Planner shall be able to zoom to the AOI.	43681: VegSpec Planner	Must	1	Draft	Map,Navigation
42151	User Requirement	User Select Map Imagery	The VegSpec Planner shall be able to select the imagery to be displayed.	43681: VegSpec Planner	Must	1	Draft	Imagery,Map

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Requirement Status	Tags
42157	User Requirement	User Search by Address	The VegSpec Planner shall be able to zoom to a specified address at these levels: state, county, city and street.	43681: VegSpec Planner	Must	1	Draft	Map,Search
42158	User Requirement	User Search by Lat / Long	The VegSpec Planner shall be able to zoom to a specified latitude / longitude.	43681: VegSpec Planner	Must	1	Draft	Map,Search
42144	User Requirement	User Zoom Out on Map	The VegSpec Planner shall be able to zoom out on the displayed map.	43681: VegSpec Planner	Must	1	Draft	Map,Navigation
42116	User Requirement	User Zoom In on Map	The VegSpec Planner shall be able to zoom in on the displayed map.	43681: VegSpec Planner	Must	1	Draft	Map,Navigation
42147	User Requirement	User Zoom to Current Map Extent	The VegSpec Planner shall be able to zoom to the currently selected map extent.	43681: VegSpec Planner	Must	1	Draft	Extent,Map,Navigation
42428	User Requirement	All Users Identify Where Am I	VegSpec Planners shall be able to identify location attributes for a specific point on the map.	43681: VegSpec Planner	Must	1	Draft	Authorization,Map
42168	User Requirement	User Identify Point Attributes	The VegSpec Planner shall be able to identify a point on the map for which they wish to see location attributes.	43681: VegSpec Planner	Must	1	Draft	Location,Map
42118	Functional Requirement	Hybrid Imagery Default Imagery	The system shall display the Hybrid imagery as the default imagery.	43681: VegSpec Planner	Must	1	Draft	Imagery,Map
42399	Functional Requirement	System Support Map Display of EPA Level III Ecoregions	The system shall be able to display the EPA Level III Ecoregion layer on the map.	43681: VegSpec Planner 44165: Level III Ecoregions Layer	Must	1	Draft	Layer,Map
42164	Functional Requirement	System Support Map Display of HUC	The system shall be able to display the 8-digit HUC layer on the map.	43681: VegSpec Planner 44160: Hydrologic Unit Layer	Must	1	Draft	Layer,Map
42165	Functional Requirement	System Support Map Display of Soils	The system shall be able to display the Soils layer on the map.	43681: VegSpec Planner 43864: Soil	Must	1	Draft	Layer,Map
42187	Functional Requirement	System Support NRCS Map Extents	The system shall support the set of map extents that give the user access to all locations served by NRCS.	43681: VegSpec Planner 42154: Map Extent	Must	1	Draft	Extent,Map
42166	Functional Requirement	System Support Map Display of MLRA	The system shall be able to display the MLRA layer on the map.	43681: VegSpec Planner 44155: MLRA	Must	1	Draft	Layer,Map
42117	Functional Requirement	System Support Hybrid Map Imagery	The system shall support the Hybrid type of map imagery.	44166: Hybrid Imagery 43681: VegSpec Planner	Must	1	Draft	Imagery,Map
42183	Functional Requirement	System Determine Point Location Attributes	The system shall determine the location attributes for a specified point.	43681: VegSpec Planner 42182: Point Location Information	Must	1	Draft	Location,Map
42167	Functional Requirement	System Support Map Display of Climate	The system shall be able to display a Climate layer on the map.	43681: VegSpec Planner 43866: Climate	Must	1	Draft	Layer,Map

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Requirement Status	Tags
42163	Functional Requirement	System Support Map Display of PLSS	The system shall be able to display a PLSS layer on the map.	43681: VegSpec Planner 44163: PLSS Layer	Must	1	Draft	Layer,Map

2.4.3.2 AOI Layer Requirements

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
42402	User Requirement	User Select Display Units of AOI	The VegSpec Planner shall be able to select the display units the AOI.	43681: VegSpec Planner 42436: Length Display Units 42434: Area Display Units	Must	1	Draft	AOI,Measurements
42394	User Requirement	User Draw AOI Multi-part Polygon	The VegSpec Planner shall be able to draw an Area of Interest as a multi-part polygon.	43681: VegSpec Planner	Must	1	Draft	AOI,Geometry
42184	User Requirement	All Users Import Shape File	VegSpec Planners shall be able to import a shape file to define the Area of Interest (AOI).	43681: VegSpec Planner	Must	1	Draft	AOI,Authorization
42401	User Requirement	User Provide Actual Measurements	The VegSpec Planner shall be able to provide actual measurements for the AOI that will be used in place of the auto calculated size of the entered geometry.	43681: VegSpec Planner 44143: User Line Polygon Width 44146: User AOI Area 44138: User Line Polygon Length	Must	1	Draft	AOI,Measurements
42185	User Requirement	User Import Shape File	The VegSpec Planner shall be able to import a shape file as the Area of Interest.	43681: VegSpec Planner	Must	1	Draft	AOI,Geometry
42395	User Requirement	User Draw AOI Donut Polygon	The VegSpec Planner shall be able to draw an Area of Interest as a donut polygon.	43681: VegSpec Planner	Must	1	Draft	AOI,Geometry
42396	User Requirement	User Draw AOI Line with Width	The VegSpec Planner shall be able to draw an Area of Interest as a line with a user entered width and a user determination of whether the width is centered on the line or on one side or the other.	43681: VegSpec Planner	Must	1	Draft	AOI,Geometry
42105	User Requirement	All Users Create AOI	VegSpec Planners shall be able to create an Area of Interest (AOI).	43681: VegSpec Planner	Must	1	Draft	AOI,Authorization
42397	User Requirement	All Users Modify AOI	VegSpec Planners shall be able to modify an Area of Interest (AOI).	43681: VegSpec Planner	Must	1	Draft	AOI,Authorization

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
42398	User Requirement	All Users Delete AOI	VegSpec Planners shall be able to delete an Area of Interest (AOI). (For example, a user shall be able to clear the current AOI and start over.)	43681: VegSpec Planner	Must	1	Draft	AOI,Authorization
42114	User Requirement	User Draw AOI Rectangle	The VegSpec Planner shall be able to draw an Area of Interest as a rectangle.	43681: VegSpec Planner	Must	1	Draft	AOI,Geometry
42393	User Requirement	User Draw AOI Multi-point Polygon	The VegSpec Planner shall be able to draw an Area of Interest as a multi-point polygon.	43681: VegSpec Planner	Must	1	Draft	AOI,Geometry
42431	Functional Requirement	System Render Line as Polygon	The system shall render the line feature as a polygon using the user defined width and user defined width location.	43681: VegSpec Planner	Must	1	Draft	AOI,Geometry
42429	Functional Requirement	System Determine Calculated Area for AOI	The system shall determine the calculated area of the AOI for all geometry types.	43681: VegSpec Planner 44148: Calculated AOI Area	Must	1	Draft	AOI,Measurements
42430	Functional Requirement	System Determine Actual Area for AOI	The system shall determine the actual area of the AOI to be used for planning purposes for all geometry types.	43681: VegSpec Planner 44137: Plan Area	Must	1	Draft	AOI,Measurements
42438	Functional Requirement	System Translate Between Units of Measure	The system shall translate between the units of measure.	43681: VegSpec Planner	Must	1	Draft	AOI,Geometry,Measurements
42400	Functional Requirement	System Provide Calculated Measurements	The system shall provide calculated measurements for the drawn geometry, e.g., area of polygons, length for lines.	43681: VegSpec Planner 44144: Calculated Feature Size	Must	1	Draft	AOI,Measurements

2.4.3.3 AOI Filtering Requirements

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Requirement Status	Tags
43848	User Requirement	User Select MLRA	An NRCS User must select a single MLRA when the AOI intersects more than one MLRA.	43583: NRCS Planner	Must	1	Draft	AOI,FilterCriteria,MLRA
43847	User Requirement	User Select State / County	A user must select a single county when the AOI intersects more than one county.	43681: VegSpec Planner 44338: Plan County	Must	1	Draft	AOI,FilterCriteria,State

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Requirement Status	Tags
43849	User Requirement	User Select Soil Mapunit	A user must select a single Soils Mapunit when the AOI intersects more than one Soil Mapunit.	43681: VegSpec Planner	Must	1	Draft	AOI,FilterCriteria,Soils
43850	User Requirement	User Select Climate Station	A user must select a single Climate Station when the AOI intersects the boundaries of more than one Climate Station.	43681: VegSpec Planner	Must	1	Draft	AOI,Climate,FilterCriteria
43860	Functional Requirement	System Filter Plants by Climate	The system shall limit the set of available plants to those whose plant characteristics map to the climate characteristics of the selected Climate Station.	43681: VegSpec Planner 43958: Climate - Plant Association - Valid Values 44404: Climate - Plant Association - Valid Close Match Values	Must	1	Draft	Climate,FilterCriteria,Plants
43857	Functional Requirement	System Filter Plants by NRCS State	The system shall limit the set of available plants to those associated within the NRCS state plants list for the selected state.	43912: NRCS State - Plant Association - Valid Values 43583: NRCS Planner	Must	1	Draft	FilterCriteria,Plants,State
43854	Functional Requirement	System Determine Soils of AOI	The system shall determine which Soil Map Units are associated with the AOI.	43681: VegSpec Planner 43927: AOI - Soils Association - Valid Values	Must	1	Draft	AOI,FilterCriteria,Soils
43858	Functional Requirement	System Filter Plants by MLRA	The system shall limit the set of available plants to those associated with the selected MLRA.	43583: NRCS Planner 43923: MLRA - Plant Association - Valid Values	Must	1	Draft	FilterCriteria,MLRA,Plants
43855	Functional Requirement	System Determine Climate of AOI	The system shall determine the Climate that is associated with the AOI.	43681: VegSpec Planner 43932: AOI - Climate Association - Valid Values	Must	1	Draft	AOI,Climate,FilterCriteria
43885	Functional Requirement	System Filter Plants by PLANTS State	The system shall limit the set of available plants to those associated within the PLANTS state plant list for the selected state.	43884: General Planner 43915: PLANTS State - Plant Association - Valid Values	Must	1	Draft	FilterCriteria,Plants,State
43852	Functional Requirement	System Determine States / Counties of AOI	The system shall determine which States & Counties are associated with the AOI.	43681: VegSpec Planner 44200: AOI - County Association - Valid Values 43935: AOI - State Association - Valid Values	Must	1	Draft	AOI,FilterCriteria,State

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Requirement Status	Tags
43859	Functional Requirement	System Filter Plants by Soils	The system shall limit the set of available plants to those whose plant characteristics map to the soil characteristics of the selected Soil Mapunit.	43681: VegSpec Planner 44403: Soil - Plant Association - Valid Close Match Values 43959: Soil - Plant Association - Valid Values	Must	1	Draft	FilterCriteria,Plants,Soils
43853	Functional Requirement	System Determine MLRAs of AOI	The system shall determine which MLRAs are associated with the AOI.	43940: AOI - MLRA Association - Valid Values 43583: NRCS Planner	Must	1	Draft	AOI,FilterCriteria,MLRA

2.5 Plan Purpose

2.5.1 Overview

2.5.1.1 Key Points

- NRCS Planners deal with Conservation Practices and Resource Concerns
 - Both practices and resource concerns are mapped to plants and the plant mapping can vary by state
- General Planners deal with Purposes and Objectives
 - Objectives are mapped to resource concerns and not directly to plants, therefore the cross walk to resource concerns is used to get to plants
- Everyone selects a Design Goal
 - A design goal is something like, temporary cover, riparian, windbreak, etc.
 - The purpose of defining a design goal is to
 - Allow the application to collect the correct information for different kinds of design, e.g., does the user need to provide information about a linear or area planting?
 - Further filter out plants that do not apply, e.g., only include plants appropriate for temporary cover, only include plants that can be propagated by sod, etc.
- The filtering done here is part of primary filtering

2.5.1.2 *Missing Requirement Detail*

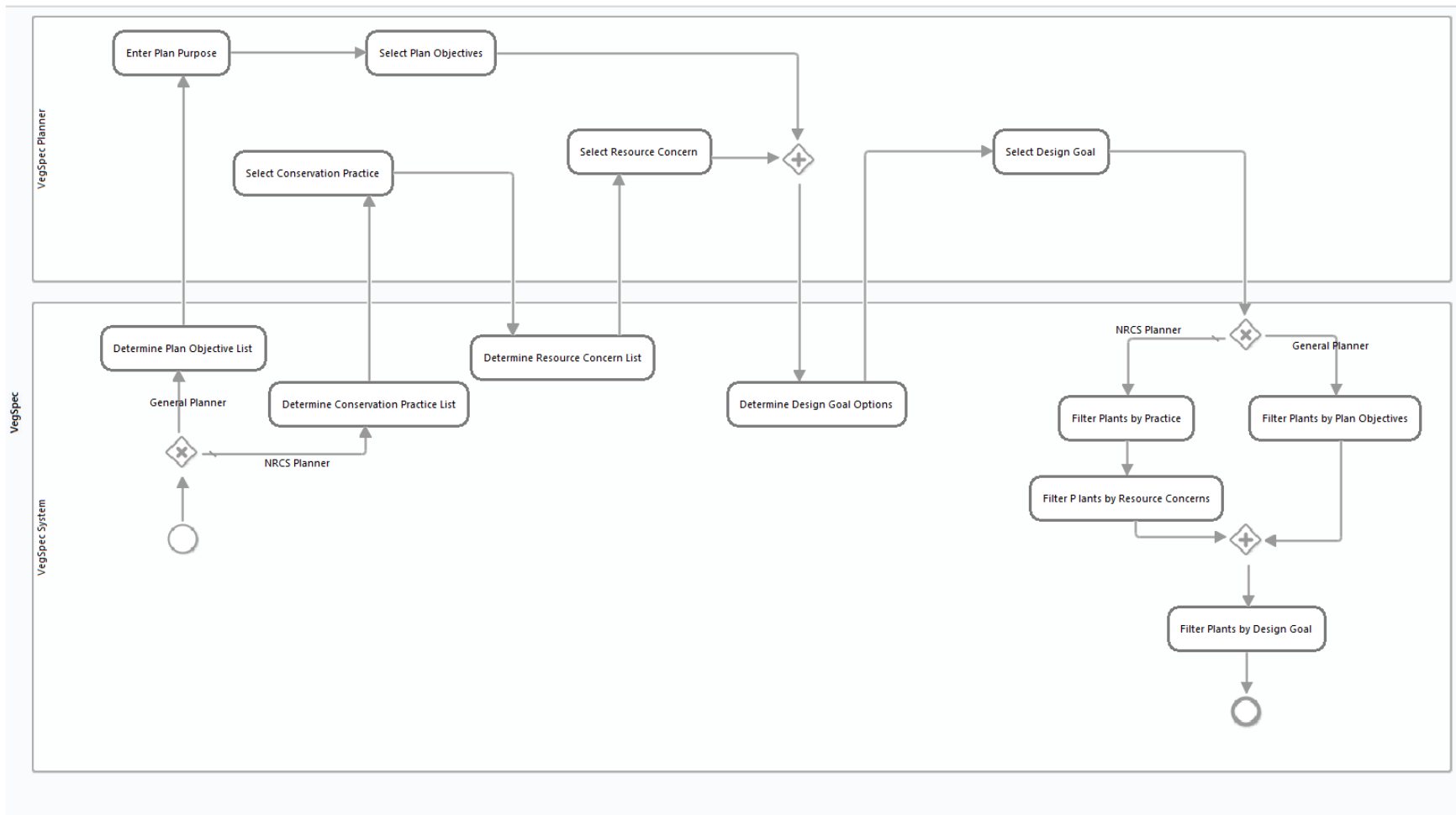
- Identification of attributes that may be needed for view only purposes

2.5.1.3 *Items Requiring Attention from Business SMEs*

- To facilitate generation of the plan document for General planners the following approach was used
 - A plan purpose is intended to be analogous to a practice and there is one value used for the title in the plan document
 - Currently, the requirements say that the user will enter a text value for plan purpose, but maybe there should be a choice list with option to enter a custom value
 - Currently, plan purpose is not used to filter plants; for general planners plant filtering is done via selection of objectives
 - Plan objectives were defined to be analogous to resource concerns
 - Currently, plant filtering is done via the mapping of objective -> resource concern -> plant; however, the requirements do not directly deal with the fact that the resource concern to plant list can vary by state. Since we will know a state for the General Planner case we can apply that in this this filtering as well. Do you see any problems with that?
 - This also means that the set of objectives presented to the user should be filtered by state. This is not currently specified in these requirements.
- A selection of linear vs area had been discussed but was replaced with the Design Goal selection because it provided more information as discussed above. Any concerns?
 - Is there a better term, maybe Design Type?
 - This is part of the primary filter so the user will not see any plants that are filtered out, for example, if temporary cover, then only temporary cover plants, if a sodding then only plants that can be propagated by sod, etc. Any concerns with this?

2.5.2 Process Diagram

ID	Artifact Type	Name	Diagram	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4383 7	Process Diagram	Plan Purpose Workflow	See Diagram	44225: User Select Plan Objective 44231: System Filter Plants by Plan Objectives 43027: System Determine Vegetative Practices 44432: User Select Design Goal 43025: System Determine Vegetative Resource Concerns 44453: System Determine Design Goal Options 43861: System Filter Plants by Practice 44425: System Filter Plants by Design Goal 44431: User Enter Plan Purpose 43023: User Select Practice 44226: System Determine Vegetative Plan Objectives 43862: System Filter Plants by Resource Concern 43026: User Select Resource Concern	Must	1	Draft	Purpose



2.5.3 Requirements

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44225	User Requirement	User Select Plan Objective	A user must select an objectives for the plan.	44361: Plan Objective 43884: General Planner	Must	1	Draft	FilterCriteria,Purpose
44432	User Requirement	User Select Design Goal	A user must be able to select the design goal.	43681: VegSpec Planner 44414: Requested Design Goal	Must	1	Draft	FilterCriteria,Purpose
44431	User Requirement	User Enter Plan Purpose	A user must be able to enter a plan purpose.	43884: General Planner 44430: Plan Purpose	Must	1	Draft	FilterCriteria,Purpose
43023	User Requirement	User Select Practice	A user must select a conservation practice.	43583: NRCS Planner 44359: Plan Practice	Must	1	Draft	FilterCriteria,Practice,Purpose
43026	User Requirement	User Select Resource Concern	A user must select one or more resource concerns.	43583: NRCS Planner 44360: Plan Resource Concerns	Must	1	Draft	FilterCriteria,Purpose,ResConcern
44231	Functional Requirement	System Filter Plants by Plan Objectives	The system shall limit the set of available plants to those plants that are associated with the resource concerns for the selected state and for the selected plan objectives.	43884: General Planner 44227: Plan Objective - Plant Association - Valid Values	Must	1	Draft	FilterCriteria,Purpose
43027	Functional Requirement	System Determine Vegetative Practices	The system shall determine the appropriate set of vegetative conservation practices by limiting to those appropriate for vegetative planning and to that that are approved for the specified state.	43951: State - Practice Association - Valid Values 43583: NRCS Planner 43031: Vegetative Conservation Practice - Valid Values	Must	1	Draft	FilterCriteria,Practice,Purpose
43025	Functional Requirement	System Determine Vegetative Resource Concerns	The system shall determine the appropriate set of resource concerns for vegetative planning for the specified practice.	43583: NRCS Planner 43845: Practice - Resource Concern Association - Valid Values	Must	1	Draft	FilterCriteria,Purpose,ResConcern
44453	Functional Requirement	System Determine Design Goal Options	The system shall determine the appropriate set of design goal options.	43681: VegSpec Planner 44415: Requested Design Goal - Valid Values	Must	1	Draft	Purpose
43861	Functional Requirement	System Filter Plants by Practice	The system shall limit the set of available plants to those plants that are associated with the selected practice and the selected state.	43944: State - Practice - Plant Association - Valid Values 43583: NRCS Planner	Must	1	Draft	FilterCriteria,Practice,Purpose

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44425	Functional Requirement	System Filter Plants by Design Goal	The system shall limit the set of available plants to those plants that meet the criteria associated with the specified design goal.	43681: VegSpec Planner 44217: Plant - Primary Plant Characteristic Association - Valid Values	Must	1	Draft	FilterCriteria,Purpose
44226	Functional Requirement	System Determine Vegetative Plan Objectives	The system shall determine the appropriate set of plan objectives for vegetative planning.	43884: General Planner 44220: Vegetative Plan Objectives - Valid Values	Must	1	Draft	FilterCriteria,Purpose
43862	Functional Requirement	System Filter Plants by Resource Concern	The system shall limit the set of available plants to those plants that are associated with the selected resource concerns for the selected state.	43583: NRCS Planner 43954: State - Resource Concern - Plant Association - Valid Values	Must	1	Draft	FilterCriteria,Purpose,ResConcern

2.6 Secondary Filtering

2.6.1 Overview

2.6.1.1 Key Points

- Users can switch their view between Standard and Custom Mix mode, that is, they can see what standard mixes are available or what individual plants are available.
- Users can switch between plant attribute sets. In order to facilitate looking at a reasonable number of attributes in the user interface, sets of attributes were defined for different logical groupings such as, Soil Stabilization or Livestock Use.
- The user can optionally filter by secondary characteristics; each selection is an AND condition.
- Standard mixes are defined by each state.
- Rules are applied to determine when a standard mix should be excluded from the list. It is not just a straight all plants in the mix must be in the list or not.

2.6.1.2 Missing Requirement Detail

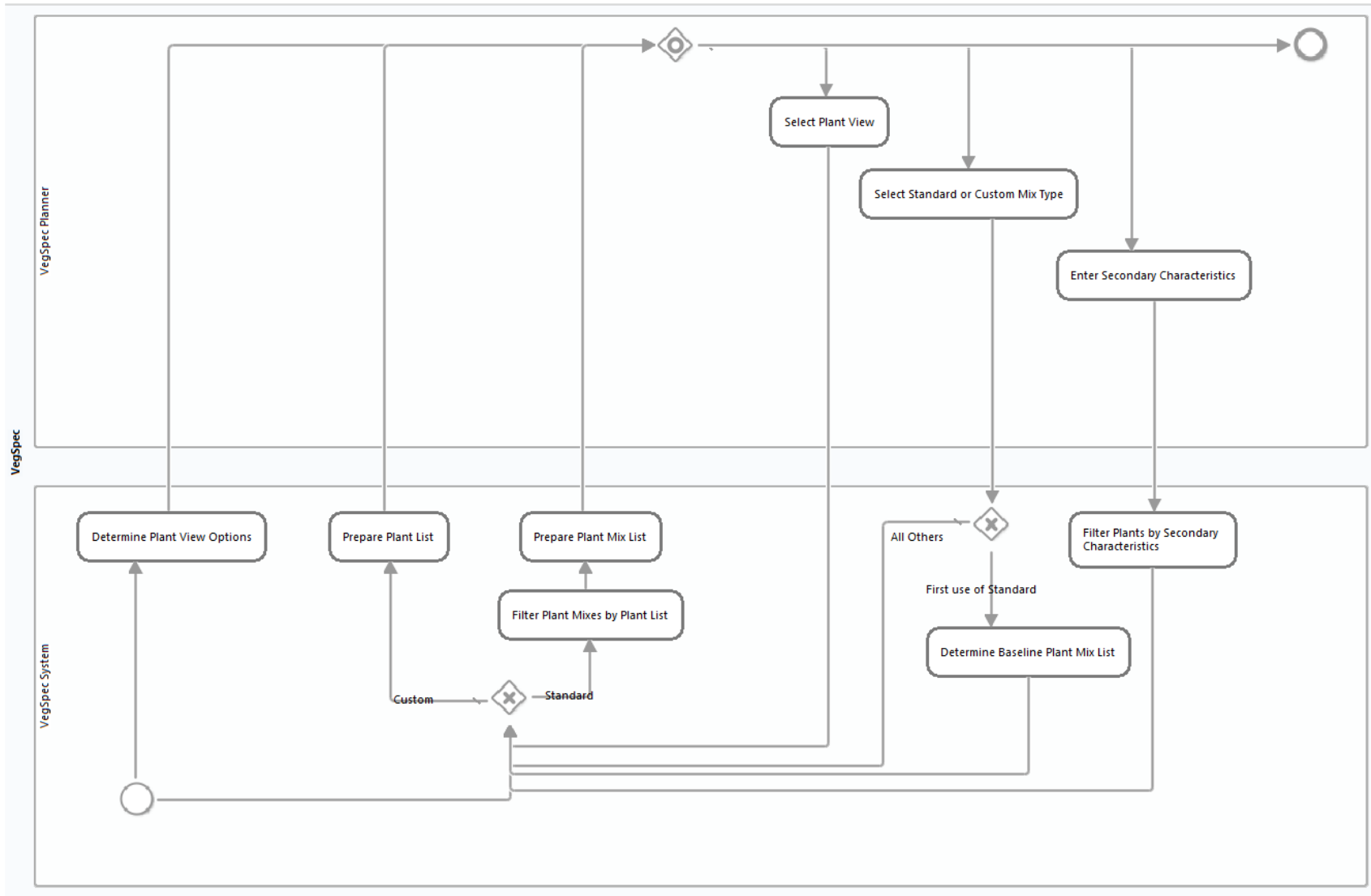
- Plant type matching for Legumes

2.6.1.3 Items Requiring Attention from Business SMEs

- Plant Type matching for Legumes still needs to be defined.

2.6.2 Process Diagram

ID	Artifact Type	Name	Diagram	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43846	Process Diagram	Secondary Filtering Workflow	See Diagram	43966: System Determine Plant View Options 44004: User Enter Secondary Characteristics 44020: System Determine Baseline Plant Mix List 44009: System Prepare Plant Mix List 43972: System Filter Plants by Secondary Characteristics 44008: System Prepare Plant List 44002: User Select Plant View 44003: User Select Standard or Custom Plant Mix Mode 44033: System Filter Plant Mix List by Plant List	Must	1	Draft	FilterCriteria,Mix,Plants,Secondary



2.6.3 Requirements

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44004	User Requirement	User Enter Secondary Characteristics	A user must be able to optionally enter values for the secondary characteristics to be used for plant filtering.	43681: VegSpec Planner 43992: Plants Requested Secondary Filtering Attributes	Must	1	Draft	Plants
44002	User Requirement	User Select Plant View	A user must be able to select which set of plant characteristics are displayed for each plant.	43681: VegSpec Planner 43967: Plant View Option	Must	1	Draft	Plants
44003	User Requirement	User Select Standard or Custom Plant Mix Mode	A user must be able to indicator whether they wish to use standard plant mixes or if they wish to define their own custom mix from the plant list.	44005: Plant Mix Type 43681: VegSpec Planner	Must	1	Draft	Mix,Plants
43966	Functional Requirement	System Determine Plant View Options	The system shall determine the set of view options that are available to the user when viewing plants in the plant list or plant mix list.	43681: VegSpec Planner 43968: Plant View Option - Valid Values	Must	1	Draft	Mix,Plants
44020	Functional Requirement	System Determine Baseline Plant Mix List	The system shall determine the set of standard plant mixes that meet the primary plant filtering criteria.	43681: VegSpec Planner 44030: Plant Mix List - Plant Mix Association - Valid Values	Must	1	Draft	Mix,Plants
44009	Functional Requirement	System Prepare Plant Mix List	The system shall prepare the plant mix list by applying the appropriate Plant View to the plant data. Note: At this time, plants that have been eliminated due to secondary characteristics will still be in the list but will be marked as such. Note: At this time, plant mixes that have been eliminated due to too many plants in the plant mix having been eliminated due to secondary characteristics will still be in the list but will be marked as such.	43681: VegSpec Planner 43967: Plant View Option	Must	1	Draft	Mix,Plants
43972	Functional Requirement	System Filter Plants by Secondary Characteristics	The system shall limit the set of available plants to those whose plant characteristics map to the requested secondary characteristics.	43681: VegSpec Planner 43989: Plant - Secondary Plant Characteristic Association - Valid Values	Must	1	Draft	Plants
44008	Functional Requirement	System Prepare Plant List	The system shall prepare the plant list by applying the appropriate Plant View to the plant data. Note: At this time, plants that have been eliminated due to secondary characteristics will still be in the list but will be marked as such.	43681: VegSpec Planner 43967: Plant View Option	Must	1	Draft	Plants

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44033	Functional Requirement	System Filter Plant Mix List by Plant List	The system shall determine the set of standard plant mixes that meet the secondary plant filtering criteria.	43681: VegSpec Planner 44030: Plant Mix List - Plant Mix Association - Valid Values	Must	1	Draft	Mix,Plants

2.7 Plant Selection

2.7.1 Overview

2.7.1.1 Key Points

- The user determines if they will use a standard mix or a custom mix
 - If custom, they will enter the percentage of each plant in the mix
- Then based on propagation type and design goal the user must provide the appropriate information needed for each plant so that total quantities may be determined.
- Looking across the different table layouts for the generated plan an attempt was made to collect a common set of attributes for each plant so that any of the tables could be populated. Those common attributes are:
 - Propagation Type – when there is only one, no selection is needed
 - Quantity per – the specifics can vary depending on design goal and propagation type, seed lbs. per acre, area spacing in feet, etc.
 - Plant Notes – some tables had notes at the plant level, some did not; for user interface consistency purposes this is defined to always be optionally captured for each plant
- For linear planting the user must provide a total linear feet value to be used in calculations in lieu of plan area

2.7.1.2 Missing Requirement Detail

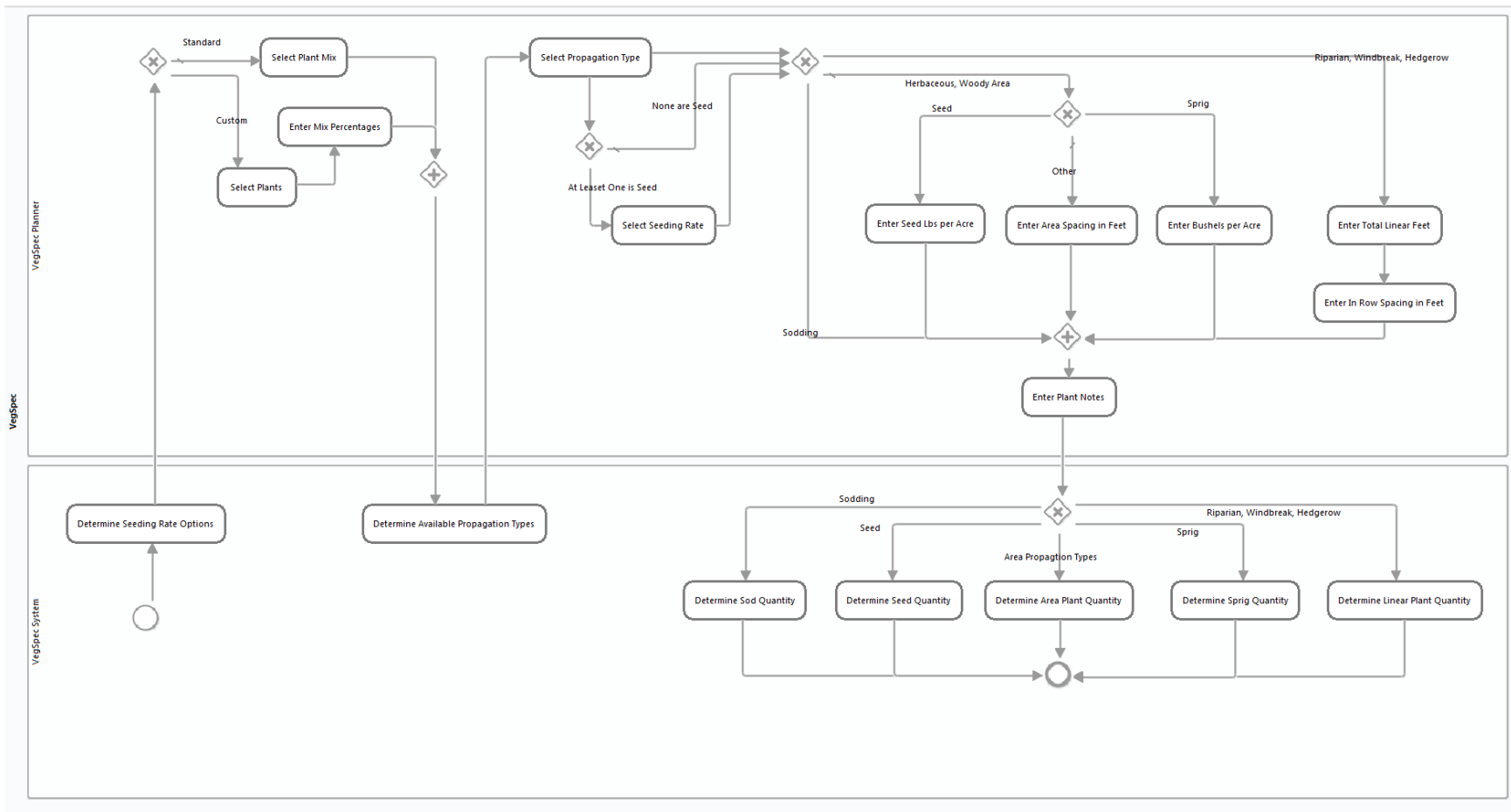
- The Riparian table in the generated report includes information about zones. There are no zone requirements at this time. This would be the section where that extra information would be collected from the user.

2.7.1.3 Items Requiring Attention from Business SMEs

- Seed Pounds per Acre (PLS)
 - Currently, this is defined as being managed with the vegetative reference data as well as being entered by the user. Should it be one or the other, or should it be both with maybe an option for the user to provide a custom value to overwrite the value from reference data?
- Zones
 - Are zone requirements needed? If so, what are they?
- Common Plant Attributes
 - Is the approach for collection a common set of attributes for each plant, regardless of design goal/target table sufficient? E.g., is it ok to always get notes at the plant level?

2.7.2 Process Diagram

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4423 2	Process Diagram	Plant Selection Workflow	See Diagram	44236: User Enter Total Linear Feet 44428: User Enter Plant Notes 44238: System Determine Linear Plant Quantity 44043: User Select Seeding Rate 44429: User Enter Seed (PLS) Pounds per Acre 44266: System Determine Available Propagation Types 44172: System Determine Seed (PLS) Quantity 44042: User Enter Plant Mix Percentage 44034: User Select Plant Mix 44233: System Determine Sod Quantity 44427: User Select Propagation Type 44036: User Select Plants 44237: User Enter In Row Spacing in Feet 44249: User Enter Area Spacing in Feet 44250: System Determine Area Plant Quantity 44256: User Enter Bushels per Acre 44255: System Determine Sprig Quantity	Must	1	Draft	Mix,Plants



2.7.3 Requirements

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44236	User Requirement	User Enter Total Linear Feet	A user must be able to enter the total linear feet for a linear planting. The mix percentage will be applied to this value for each plant in the mix.	43681: VegSpec Planner 44241: Linear Planting Total Linear Feet	Must	1	Draft	Mix,Plants
44428	User Requirement	User Enter Plant Notes	The user must be able to enter additional notes about each plant.	43681: VegSpec Planner 44259: Plant Notes	Must	1	Draft	Mix,Plants
44043	User Requirement	User Select Seeding Rate	A user must be able to enter the seeding rate for the selected plant mix.	43681: VegSpec Planner 43970: Seeding Rate	Must	1	Draft	Mix,Plants
44429	User Requirement	User Enter Seed (PLS) Pounds per Acre	A user must be able to enter the number Seed (PLS) Pounds per Acre.	43681: VegSpec Planner 44130: Seed (PLS) Pounds per Acre	Must	1	Draft	Mix,Plants
44042	User Requirement	User Enter Plant Mix Percentage	A user must be able to enter the plant mix percentages for each plant in a custom plant mix.	43681: VegSpec Planner 43865: Plant	Must	1	Draft	Mix,Plants
44034	User Requirement	User Select Plant Mix	A user must be able to select a standard plant mix.	43681: VegSpec Planner 44013: Plant Mix	Must	1	Draft	Mix,Plants
44427	User Requirement	User Select Propagation Type	The user must be able to select the propagation type for each plant in the mix.	43681: VegSpec Planner 44424: Design Propagation Type	Must	1	Draft	Mix,Plants
44036	User Requirement	User Select Plants	A user must be able to select plants from those available.	43681: VegSpec Planner 43865: Plant	Must	1	Draft	Mix,Plants
44237	User Requirement	User Enter In Row Spacing in Feet	A user must be able to enter the in-row, center-to-center spacing in linear feet for each plant in the mix.	43681: VegSpec Planner 44244: In Row Plant Spacing in Feet	Must	1	Draft	Mix,Plants
44249	User Requirement	User Enter Area Spacing in Feet	A user must be able to enter the bi-directional, center-to-center spacing in feet for each plant in the mix.	43681: VegSpec Planner 44245: Area Plant Spacing in Feet	Must	1	Draft	Mix,Plants
44256	User Requirement	User Enter Bushels per Acre	A user must be able to enter the bushels per acre for each sprig plant in the mix.	43681: VegSpec Planner 44251: Sprig Bushels per Acre	Must	1	Draft	Mix,Plants
44238	Functional Requirement	System Determine Linear Plant Quantity	The system shall determine the quantity for each plant in the mix for linear planting.	43681: VegSpec Planner 44239: Linear Planting Total Plants Each	Must	1	Draft	Mix,Plants
44266	Functional Requirement	System Determine Available Propagation Types	The system shall determine the available propagation types for each plant in the mix.	43681: VegSpec Planner 44421: Design Propagation Type - Valid Values	Must	1	Draft	Mix,Plants
44172	Functional Requirement	System Determine Seed (PLS) Quantity	The system shall determine the pure live seed quantity for each plant in the mix.	43681: VegSpec Planner 44132: Total Seed (PLS) Pounds	Must	1	Draft	Mix,Plants
44233	Functional Requirement	System Determine Sod Quantity	The system shall determine the quantity of sod for each plant in the mix.	43681: VegSpec Planner 44235: Total Sod Sq Ft	Must	1	Draft	Mix,Plants

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43969	Functional Requirement	System Determine Seeding Rate Options	The system shall determine the set of seeding rate option that available to the user.	43681: VegSpec Planner 43971: Seeding Rate - Valid Values	Must	1	Draft	Mix,Plants
44250	Functional Requirement	System Determine Area Plant Quantity	The system shall determine the quantity for each plant in the mix for an area planting.	43681: VegSpec Planner 44248: Area Planting Total Plants Each	Must	1	Draft	Mix,Plants
44255	Functional Requirement	System Determine Sprig Quantity	The system shall determine the number of bushels of sprigs for each sprig plant in the mix.	44253: Total Sprig Bushels 43681: VegSpec Planner	Must	1	Draft	Mix,Plants
44236	User Requirement	User Enter Total Linear Feet	A user must be able to enter the total linear feet for a linear planting. The mix percentage will be applied to this value for each plant in the mix.	43681: VegSpec Planner 44241: Linear Planting Total Linear Feet	Must	1	Draft	Mix,Plants
44428	User Requirement	User Enter Plant Notes	The user must be able to enter additional notes about each plant.	43681: VegSpec Planner 44259: Plant Notes	Must	1	Draft	Mix,Plants
44043	User Requirement	User Select Seeding Rate	A user must be able to enter the seeding rate for the selected plant mix.	43681: VegSpec Planner 43970: Seeding Rate	Must	1	Draft	Mix,Plants
44429	User Requirement	User Enter Seed (PLS) Pounds per Acre	A user must be able to enter the number Seed (PLS) Pounds per Acre.	43681: VegSpec Planner 44130: Seed (PLS) Pounds per Acre	Must	1	Draft	Mix,Plants
44042	User Requirement	User Enter Plant Mix Percentage	A user must be able to enter the plant mix percentages for each plant in a custom plant mix.	43681: VegSpec Planner 43865: Plant	Must	1	Draft	Mix,Plants
44034	User Requirement	User Select Plant Mix	A user must be able to select a standard plant mix.	43681: VegSpec Planner 44013: Plant Mix	Must	1	Draft	Mix,Plants
44427	User Requirement	User Select Propagation Type	The user must be able to select the propagation type for each plant in the mix.	43681: VegSpec Planner 44424: Design Propagation Type	Must	1	Draft	Mix,Plants

2.8 Instructions

2.8.1 Overview

2.8.1.1 Key Points

- Instructions have been organized into 3 basic areas:
 - Amendments
 - Narratives
 - Design Sketch

- Amendment data includes information about fertilizers and other amendments such as lime
 - They can be collected for any design goal
 - There are standard options for source and quantity for each amendment type
 - Custom entries are also supported
- Narratives include any kind of textual instructions
 - They can be collected for any design goal
 - These are organized into different categories, such as Seedbed Preparation, Planting Dates, and Operations & Maintenance.
 - These exist at the plan level, as opposed to the plant level.
 - Each category can:
 - Include standard narratives
 - Allow custom narratives
 - Be restricted as to which type they allow, e.g., Operations & Maintenance does not allow custom
- Design Sketch is a spatial layer that allows the user to sketch out some basic design instructions to assist with implementation of the plan

2.8.1.2 Missing Requirement Detail

- The Design Sketch feature is only specified as mid-level requirements, so detail is needed.

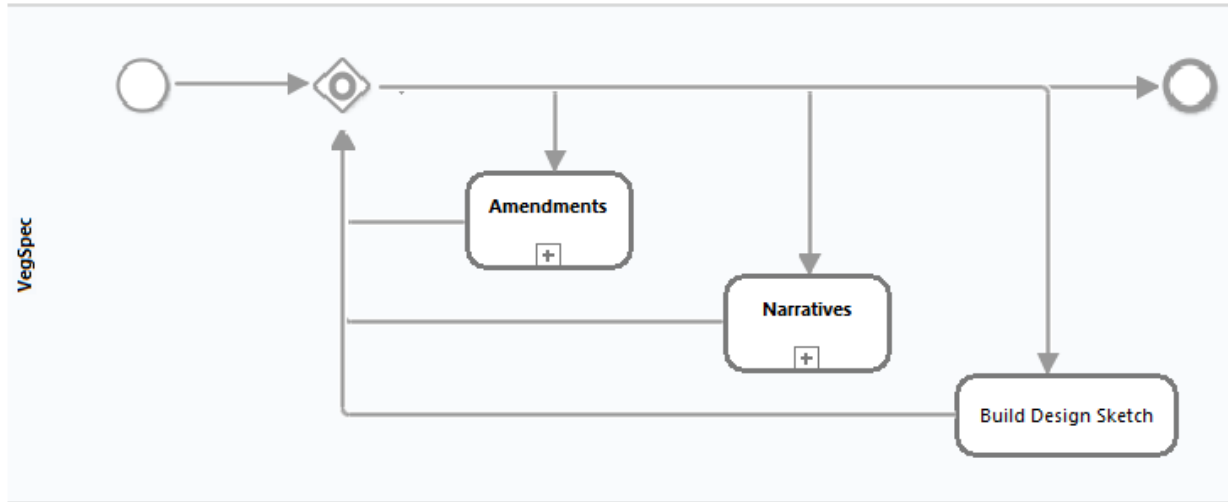
2.8.1.3 Items Requiring Attention from Business SMEs

- Should entry of Amendment information be restricted based on Design Goal (report layout)?
- Should entry of the various Narrative Categories be restricted base on Design Goal (report layout)?
- Assist with detailed requirements for Design Sketch feature, as needed.

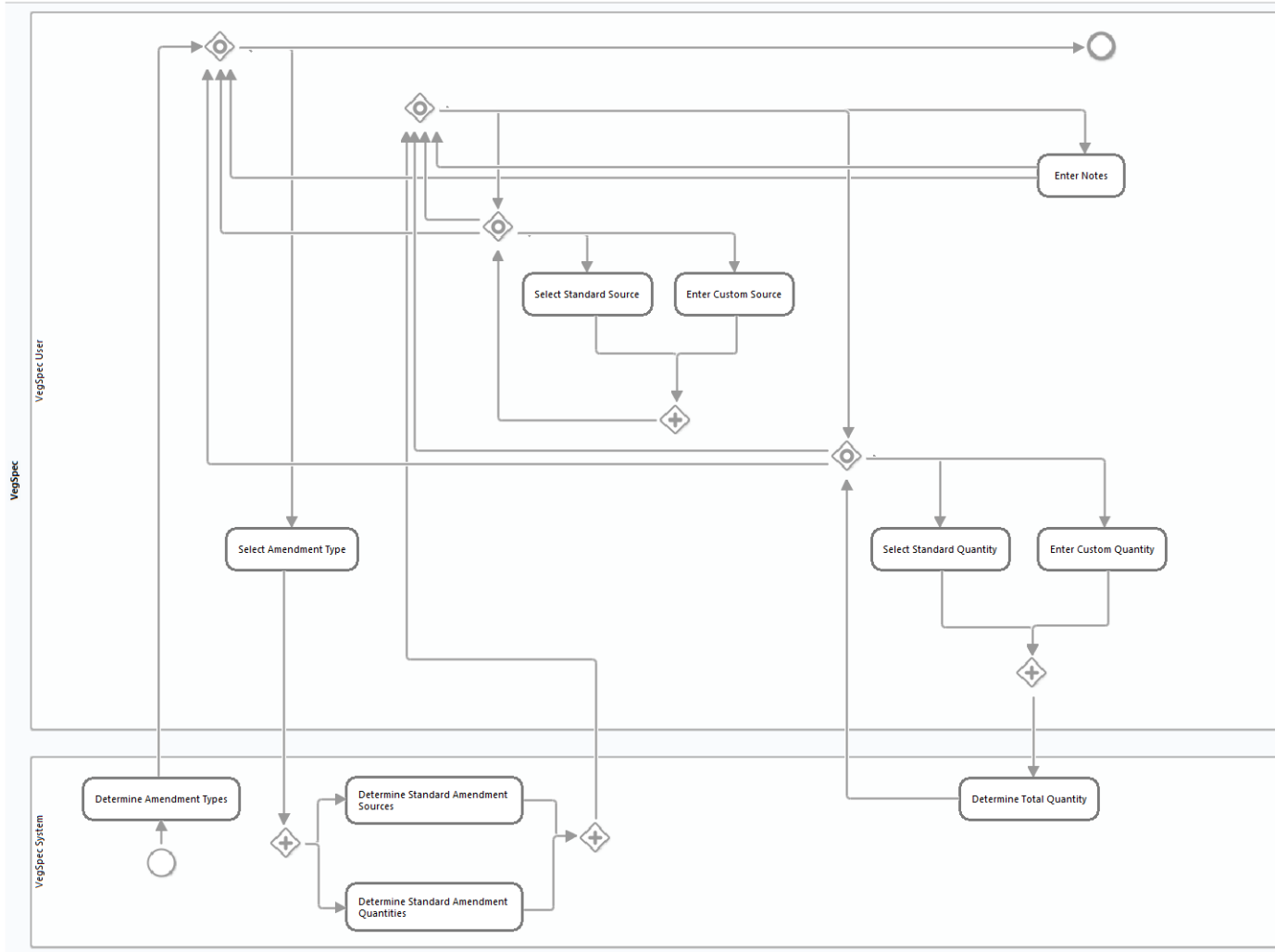
2.8.2 Process Diagram

ID	Artifact Type	Name	Diagram	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44277	Process Diagram	Instructions Workflow	See Diagram	44322: Amendment Workflow 44436: User Build Design Sketch 44458: System Support Design Sketch 44280: Narrative Workflow	Must	1	Draft	Instructions
44322	Process Diagram	Amendment Workflow	See Diagram	44328: User Select Standard Amendment Source 44325: System Determine Standard Amendment Quantities 44329: User Enter Custom Amendment Source 44326: System Determine Total Amendment Quantity 44330: User Select Standard Amendment Quantity 44331: User Enter Custom Amendment Quantity 44323: System Determine Amendment Types 44324: System Determine Standard Amendment Sources 44332: User Enter Additional Amendment Notes 44327: User Select Amendment Type	Must	1	Draft	Instructions
44280	Process Diagram	Narrative Workflow	See Diagram	44291: User Select Narrative Category 44290: System Determine Standard Narratives 44292: User Select Standard Narrative 44293: User Enter Custom Narrative 44294: User Modify Standard Narrative 44286: System Determine Narrative Categories	Must	1	Draft	Instructions

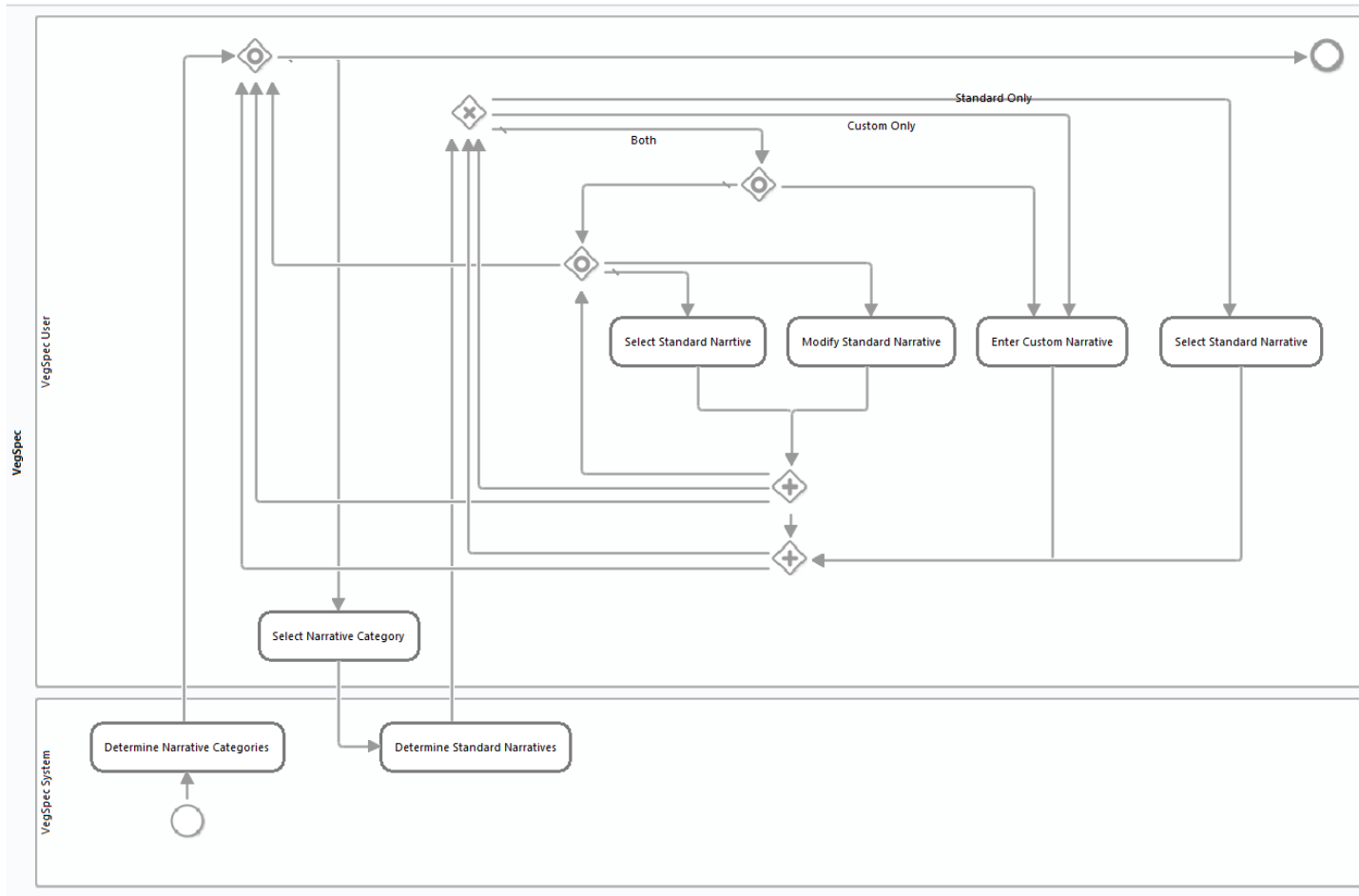
2.8.2.1 Instructions Workflow



2.8.2.2 Amendments Workflow



2.8.2.3 Narratives Workflow



2.8.3 Requirements

2.8.3.1 Amendments Requirements

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44328	User Requirement	User Select Standard Amendment Source	The user must be able to select a standard source for the given amendment type.	43681: VegSpec Planner 44303: Amendment Source	Must	1	Draft	Instructions
44329	User Requirement	User Enter Custom Amendment Source	The user must be able to enter a custom value for amendment source.	43681: VegSpec Planner 44303: Amendment Source	Must	1	Draft	Instructions
44330	User Requirement	User Select Standard Amendment Quantity	The user must be able to select a standard quantity for the given amendment type.	43681: VegSpec Planner 44304: Amendment Quantity per Unit	Must	1	Draft	Instructions
44331	User Requirement	User Enter Custom Amendment Quantity	The user must be able to enter a custom value for amendment quantity.	43681: VegSpec Planner 44304: Amendment Quantity per Unit	Must	1	Draft	Instructions
44332	User Requirement	User Enter Additional Amendment Notes	The user must be able to enter additional notes about the amendment type.	43681: VegSpec Planner 44308: Amendment Note	Must	1	Draft	Instructions
44327	User Requirement	User Select Amendment Type	The user must be able to select the amendment types that are to be included in the plan.	43681: VegSpec Planner 44296: Amendment Type	Must	1	Draft	Instructions
44325	Functional Requirement	System Determine Standard Amendment Quantities	The system shall determine the set of standard amendment sources for the selected amendment type.	43681: VegSpec Planner 44319: Standard Amendment Quantity List - Amendment Quantity Association - Valid Values	Must	1	Draft	Instructions
44326	Functional Requirement	System Determine Total Amendment Quantity	The system shall determine the total quantity of the amendment needed for the plan.	43681: VegSpec Planner 44306: Total Amendment Quantity - Valid Values 44307: Total Amendment Quantity	Must	1	Draft	Instructions
44323	Functional Requirement	System Determine Amendment Types	The system shall determine the valid available set of amendment types.	43681: VegSpec Planner 44297: Amendment Type - Valid Values	Must	1	Draft	Instructions
44324	Functional Requirement	System Determine Standard Amendment Sources	The system shall determine the set of standard amendment sources for the selected amendment type.	43681: VegSpec Planner 44312: Standard Amendment Source List - Amendment Source Association - Valid Values	Must	1	Draft	Instructions

2.8.3.2 Narratives Requirements

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4429 1	User Requirement	User Select Narrative Category	The user must select the Narrative Category for the narrative they are including in the plan.	43681: VegSpec Planner 44175: Narrative Category	Must	1	Draft	Instructions
4429 2	User Requirement	User Select Standard Narrative	The user must select the standard narratives to be included in the plan.	43681: VegSpec Planner 44272: Plan - Narrative Association - Valid Values 44179: Narrative Text	Must	1	Draft	Instructions
4429 3	User Requirement	User Enter Custom Narrative	The user must enter the text of a custom narrative.	43681: VegSpec Planner 44179: Narrative Text 44275: Plan - Narrative Association	Must	1	Draft	Instructions
4429 4	User Requirement	User Modify Standard Narrative	The user must be able to modify a standard narrative. Note: This means that the user should be able to use the text of standard narrative as the starting point for a custom narrative.	43681: VegSpec Planner 44179: Narrative Text 44275: Plan - Narrative Association	Must	1	Draft	Instructions
4429 0	Functional Requirement	System Determine Standard Narratives	The system shall determine the set of standard narratives for the selected category.	43681: VegSpec Planner 44271: Standard Narrative List - Narrative Association - Valid Values	Must	1	Draft	Instructions
4428 6	Functional Requirement	System Determine Narrative Categories	The system shall determine the valid available set of narrative categories along with an indication of whether the category allows custom narratives.	43681: VegSpec Planner 44176: Narrative Category - Valid Values 44289: Narrative Category - No Custom Allowed	Must	1	Draft	Instructions

2.8.3.3 Design Sketch Requirements

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4443 6	User Requirement	User Build Design Sketch	The user must be able to create a design sketch for inclusion in the plan document.	43681: VegSpec Planner 44438: Design Sketch	Should	1	Draft	Instructions
4445 8	Functional Requirement	System Support Design Sketch	The system shall support a design sketch layer.	43681: VegSpec Planner 44438: Design Sketch	Should	1	Draft	Instructions

2.9 Additional Plan Information

2.9.1 Overview

2.9.1.1 Key Points

- Captures any additional information needed for the plan document.

2.9.1.2 Missing Requirement Detail

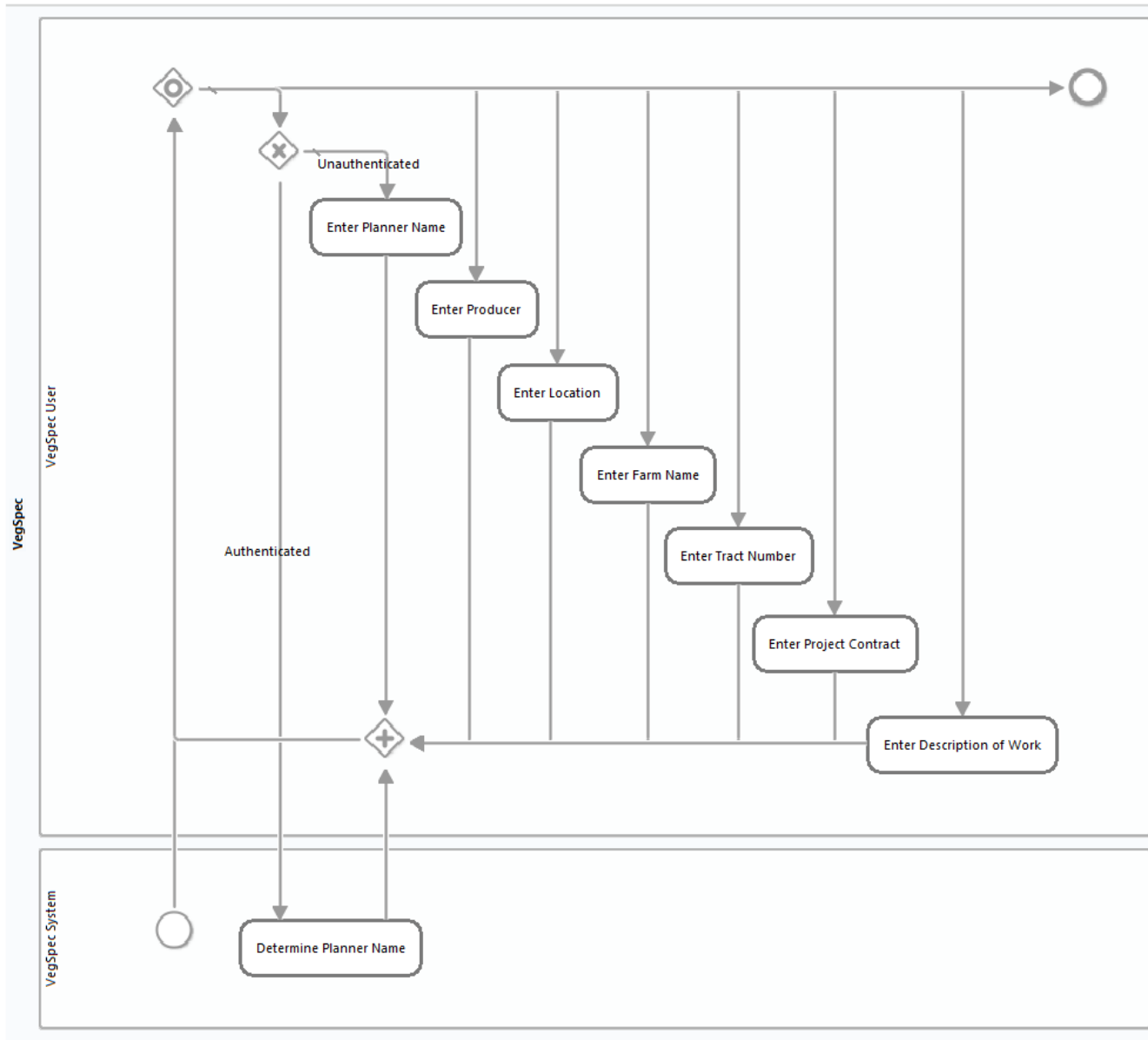
- None known

2.9.1.3 Items Requiring Attention from Business SMEs

- None known

2.9.2 Process Diagram

ID	Artifact Type	Name	Diagram	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44344	Process Diagram	Additional Plan Info Workflow	See Diagram	43599: User Enter Planner Name 44348: User Enter Project Contract 44349: User Enter Description of Work 43600: System Determine Planner Name 44345: User Enter Location 44346: User Enter Farm Name 44347: User Enter Tract Number 43678: User Enter Producer	Must	1	Draft	Plan



2.9.3 Requirements

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43599	User Requirement	User Enter Planner Name	A user must be able to enter the planner name, that is, identify themselves, when it cannot be determined systemically.	43681: VegSpec Planner 44343: Plan Planner	Must	1	Draft	Plan
44348	User Requirement	User Enter Project Contract	The user must be able to identify a project or contract that this plan is associated with.	43681: VegSpec Planner 44336: Plan Project Contract	Must	1	Draft	Plan
44349	User Requirement	User Enter Description of Work	The user must be able to enter a brief description of the work being undertaken with this plan.	43681: VegSpec Planner 44339: Plan Description of Work	Must	1	Draft	Plan
44345	User Requirement	User Enter Location	The user must be able to enter a location for where the plan will be implemented.	43681: VegSpec Planner 44334: Plan Location	Must	1	Draft	Plan
44346	User Requirement	User Enter Farm Name	The user must be able to enter a name to identify the farm where the plan will be implemented.	43681: VegSpec Planner 44335: Plan Farm Name	Must	1	Draft	Plan
44347	User Requirement	User Enter Tract Number	The user must be able to enter a tract number to identify the land where the plan will be implemented.	43681: VegSpec Planner 44337: Plan Tract Number	Must	1	Draft	Plan
43678	User Requirement	User Enter Producer	The user must be able to enter the name of the producer that the plan is being create for.	43681: VegSpec Planner 44333: Plan Producer	Must	1	Draft	Plan
43600	Functional Requirement	System Determine Planner Name	The system shall determine the name of the planner when the user is authenticated.	43835: General Planner - Authenticated 43583: NRCS Planner 44350: Plan Planner - Valid Values 44343: Plan Planner	Must	1	Draft	Plan

2.10 Generate Plan Document

2.10.1 Overview

2.10.1.1 Key Points

- The intent is that all information needed for the plan document is captured within the application and therefore, no editing of the document is expected.

2.10.1.2 Missing Requirement Detail

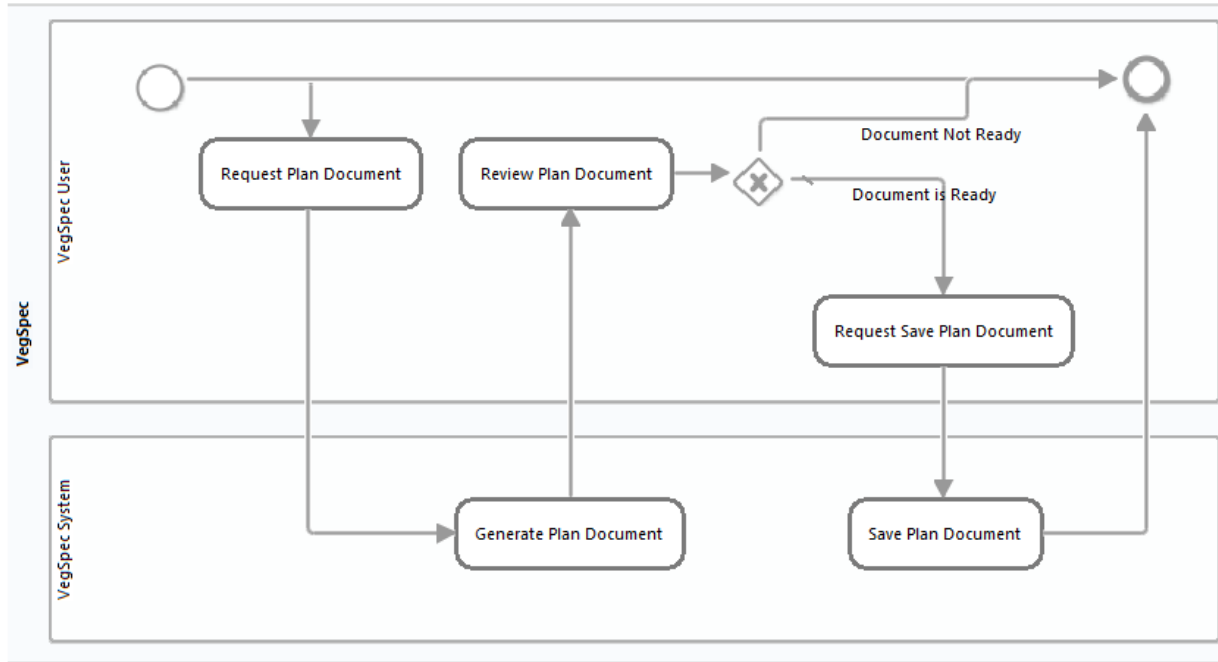
- The Generate Plan Document feature is only specified as mid-level requirements, so detail is needed.
 - It is believed that all content needed has been defined but all of the appropriate content may not be fully associated with the data requirements.
 - There are likely some details to work through, such as, should there a different first page icon for General users? Are some of the labels different, etc.?
 - More detail is needed in regards to the Practice Location Map

2.10.1.3 Items Requiring Attention from Business SMEs

- Is the goal to generate a readonly locked document that is ready for signature? At least for NRCS users? How might this vary for General users?
- Assist with detailed requirements as needed.

2.10.2 Process Diagram

ID	Artifact Type	Name	Diagram	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4435 1	Process Diagram	Generate Plan Document Workflow	See Diagram	44355: System Generate Plan Document 44352: User Request Plan Document 44356: System Save Plan Document 44354: User Request Save Plan Document 44353: User Review Plan Document	Must	1	Draft	PlanDoc



2.10.3 Requirements

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4435 2	User Requirement	User Request Plan Document	The user must be able to request generation of the plan information into a document with information arranged in a standard form.	43681: VegSpec Planner 44362: Plan Document	Must	1	Draft	PlanDoc
4435 4	User Requirement	User Request Save Plan Document	The user must be able to request saving of the plan document.	43681: VegSpec Planner 44362: Plan Document	Must	1	Draft	PlanDoc

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44353	User Requirement	User Review Plan Document	The user must be able to review the generated plan document.	43681: VegSpec Planner 44362: Plan Document	Must	1	Draft	PlanDoc
44355	Functional Requirement	System Generate Plan Document	The system shall convert the plan information into a document with information arranged in a standard form.	43681: VegSpec Planner 44362: Plan Document	Must	1	Draft	PlanDoc
44356	Functional Requirement	System Save Plan Document	The system shall save the plan document.	43681: VegSpec Planner 44362: Plan Document	Must	1	Draft	PlanDoc

2.11 Session Reuse

2.11.1 Overview

2.11.1.1 Key Points

- A user can save their set of input values and calculated values at the point of the save.
- The user can then import those values to pick up where they have left off.

2.11.1.2 Missing Requirement Detail

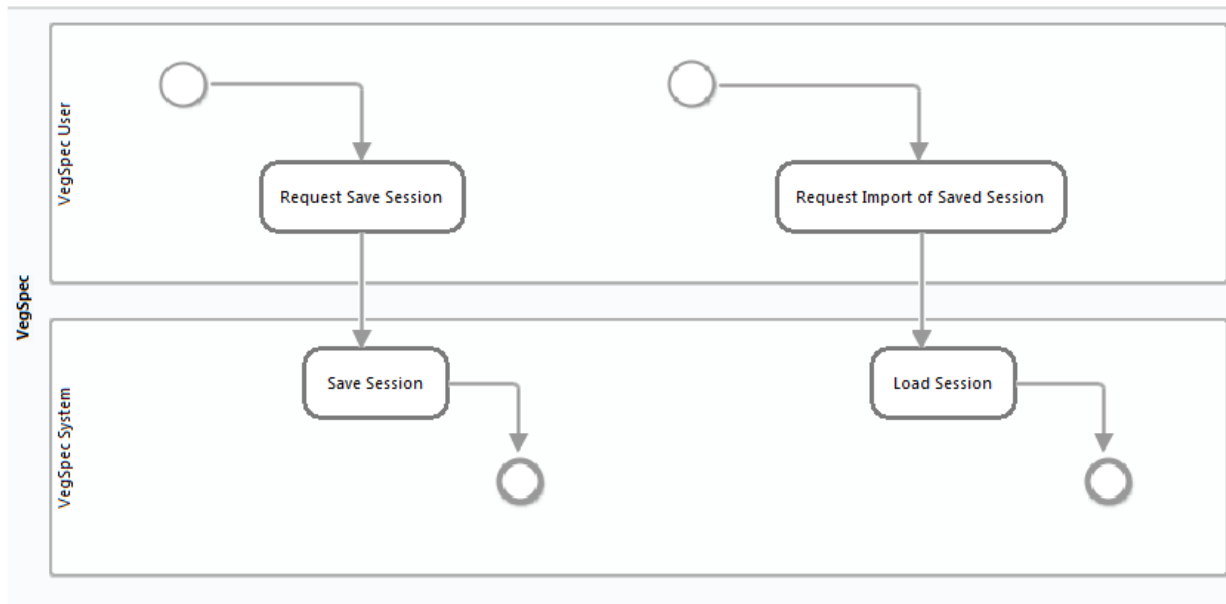
- The Session Reuse feature is only specified as mid-level requirements, so detail is needed.
 - Some indication of the specific items to include

2.11.1.3 Items Requiring Attention from Business SMEs

- None known

2.11.2 Process Diagram

ID	Artifact Type	Name	Diagram	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44367	Process Diagram	Session Reuse Workflow	See Diagram	44375: User Request Import of Saved Session 44374: User Request Save Session 44376: System Save Session 44377: System Load Session	Must	1	Draft	Session



2.11.3 Requirements

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44375	User Requirement	User Request Import of Saved Session	A user shall be able to request import of a saved session.	43681: VegSpec Planner 44372: Saved Session	Must	1	Draft	Session

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4437 4	User Requirement	User Request Save Session	A user shall be able to request that their current planning session be saved for later reuse.	43681: VegSpec Planner 44372: Saved Session	Must	1	Draft	Session
4437 6	Functional Requirement	System Save Session	The system shall save a planning session upon request.	43681: VegSpec Planner 44372: Saved Session	Must	1	Draft	Session
4437 7	Functional Requirement	System Load Session	The system shall load a saved session upon request.	43681: VegSpec Planner 44372: Saved Session	Must	1	Draft	Session

2.12 Manage Reference Data

2.12.1 Overview

2.12.1.1 Key Points

- Vegetative reference data can be grouped into 2 categories: 1) data that is managed by a user via a user interface and 2) data that is managed in the database only.
- This section relates to the reference data that is managed via a user interface.
- There is national level reference data as well as state level reference data.
- Modifications to reference data have an approval process.

2.12.1.2 Missing Requirement Detail

- The Manage Reference Data feature is only specified as mid-level requirements, so detail is needed.
 - As the planning requirements were being entered reference data that was expected to be managed by VegSpec was tagged, so there is a robust set of what is expected to be managed, but review for completeness and accuracy are still needed
 - Everything was tagged the same, that is, there is no indication of which data is to be managed by the user and which is database only so there is work to categorize the tagged data.

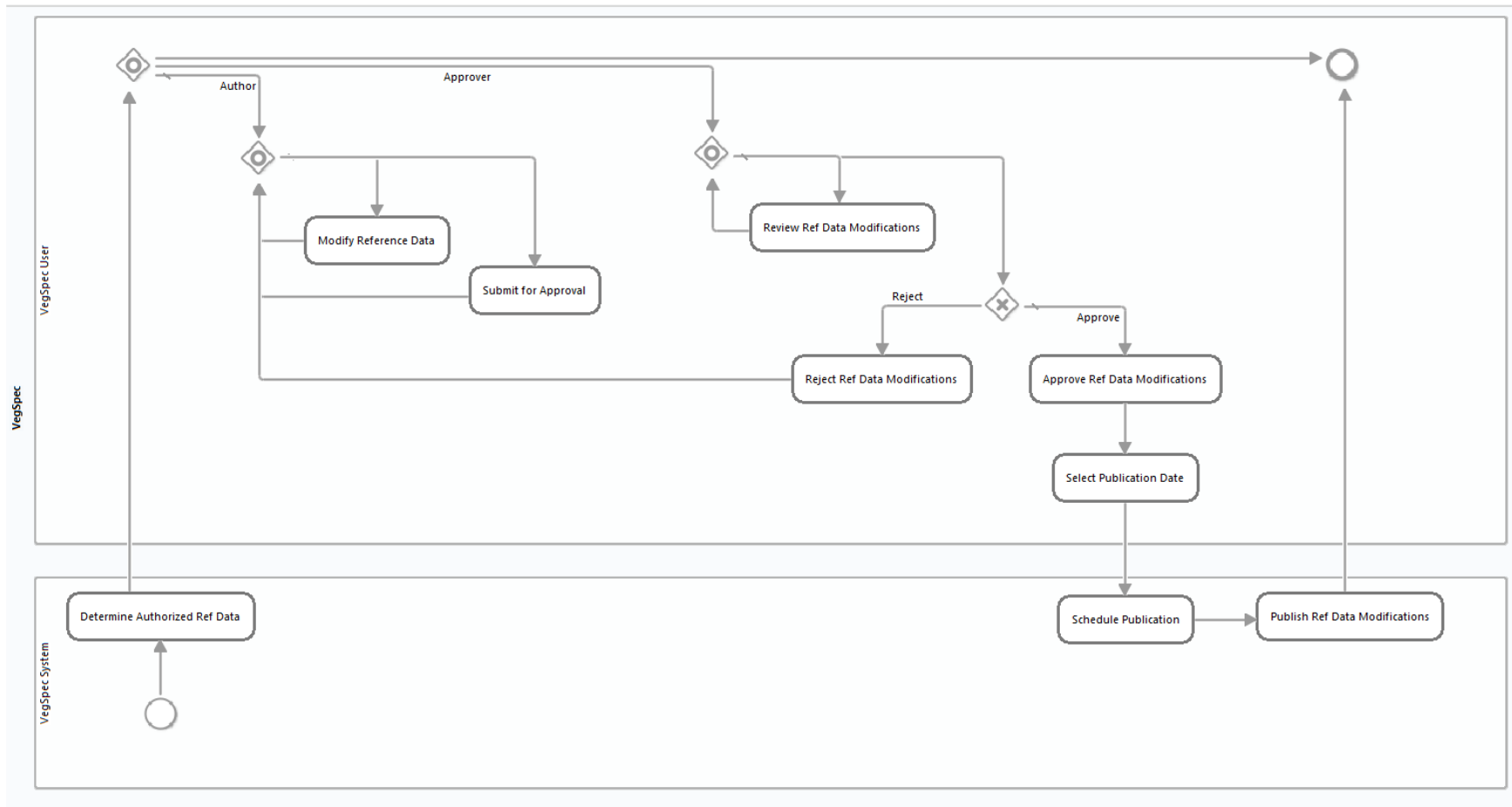
2.12.1.3 Items Requiring Attention from Business SMEs

- Assist with identification of which data items are to be managed by a user.

- Refer to the 'Link To' column for the 'Vegetative Reference Data' entity in the Data Requirements section later in this document. It contains a list of the various data items that have been tagged as vegetative reference data.
- Define detailed requirements as needed in regards to how each needs to be managed.
- Provide initial sets of valid values to be stored as reference data, e.g., what is the subset of practices that are used for vegetative purposes. Throughout the business rules, many times there is just a statement that says the Vegetative Reference Data Tool is the source of those valid values.

2.12.2 Process Diagram

ID	Artifact Type	Name	Diagram	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44380	Process Diagram	Manage Reference Data Workflow	See Diagram	44382: User Select Publication Date for Reference Data Modifications 44444: User Review Reference Data Modifications 44386: System Publish Reference Data Modifications 44383: User Approve Reference Data Modifications 44381: User Modify Reference Data 44442: User Reject Reference Data Modifications 44445: System Determine Authorized Reference Data 44443: User Submit Reference Data Modifications for Approval 44385: System Schedule Reference Data Modifications for Publication	Must	1	Draft	RefData



2.12.3 Requirements

ID	Artifact Type	Name	Requirement	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4438 2	User Requirement	User Select Publication Date for Reference Data Modifications	The user must be able to schedule an approved set of reference data changes for publication.	44448: Data Steward - Approver 44387: Vegetative Reference Data	Must	1	Draft	RefData
4444	User Requirement	User Review Reference Data Modifications	The user must be able to review the proposed reference data modifications.	44448: Data Steward - Approver 44387: Vegetative Reference Data	Must	1	Draft	RefData
4438 3	User Requirement	User Approve Reference Data Modifications	The user must be able to approve reference data modifications.	44448: Data Steward - Approver 44387: Vegetative Reference Data	Must	1	Draft	RefData
4438 1	User Requirement	User Modify Reference Data	The user must be able to modify reference data within their jurisdiction.	44447: Data Steward - Author 44387: Vegetative Reference Data	Must	1	Draft	RefData
4444 2	User Requirement	User Reject Reference Data Modifications	The user must be able to reject reference data modifications.	44448: Data Steward - Approver 44387: Vegetative Reference Data	Must	1	Draft	RefData
4444 3	User Requirement	User Submit Reference Data Modifications for Approval	The user must be able to submit reference data modifications for approval.	44447: Data Steward - Author 44387: Vegetative Reference Data	Must	1	Draft	RefData
4438 6	Functional Requirement	System Publish Reference Data Modifications	The system shall publish reference data modifications at the requested time.	44387: Vegetative Reference Data	Must	1	Draft	RefData
4444 5	Functional Requirement	System Determine Authorized Reference Data	The system shall determine the reference data that the user is authorized to manage.	41389: Data Steward 44387: Vegetative Reference Data	Must	1	Draft	RefData
4438 5	Functional Requirement	System Schedule Reference Data Modifications for Publication	The system shall be able to schedule reference data modifications for publication at the requested time.	44448: Data Steward - Approver 44387: Vegetative Reference Data	Must	1	Draft	RefData

3 Data Requirements

3.1 Overview

3.1.1 Key Points

- Data requirements are focused on defining the various data items from a business perspective, those things that a user expects to see, those things that rules need to be applied to, etc.
- The data requirements are not intended to represent logical and/or physical database designs.
- The subsequent section on Business Rules contains business rules about the data requirements.
- The line between an entity and an attribute can be somewhat gray at the business requirement level. This is because the focus is on defining business level requirements and not on the details of a data model. In some contexts an item is more like an entity and in others it is more like an attribute. A better approach may have been to use the term Data Item instead of Entity & Attribute and then associate them as needed.
- When the source of a data item is an external system, that item is linked to System Actor for that system. These can be found in the 'Linked To' column. Note: many of these will actually be defined for a Valid Values business rule that is associated with the given data item.

3.1.2 Missing Requirement Detail

- There is no diagram to represent the data items and associations. This is a critical visual aid in regards to identifying completeness and correctness of the data requirements.
- Those data items that are associated with processes that have been identified as only being mid-level requirements may need to be updated and/or created.
- Not all items have been identified that are needed for view purposes. The focus thus far on the requirements was definition of items needed to support the various rules for plant filtering.

3.1.3 Items Requiring Attention from Business SMEs

- A review of names utilized in this data requirements section to ensure they are in line with expected terminology in the user community.

3.2 Entity Data Requirements

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44317	Data Requirement	Amendment	A set of amendments that are to be included in the vegetative plan.	44307: Total Amendment Quantity 44304: Amendment Quantity per Unit 44308: Amendment Note 44296: Amendment Type 44303: Amendment Source	Must	1	Draft	Instructions
42106	Data Requirement	Area of Interest (AOI)	An Area of Interest is a spatial feature that is used to define the area that will serve as the basis of further processing by the system.	43926: AOI - Soils Association 43941: AOI - MLRA Association 42107: AOI Geometry 43933: AOI - Climate Association 43934: AOI - State Association 42110: Geometry Type	Must	1	Draft	AOI
43866	Data Requirement	Climate	The set of climate characteristics utilized by VegSpec.	43893: Climate Average Annual Precipitation 43898: Climate Growing Season 43960: Climate - Plant Association 43933: AOI - Climate Association 43895: Climate Minimum Temperature 43897: Climate Last Frost Date 44158: Climate - Valid Values 43896: Climate First Frost Date	Must	1	Draft	Climate,Layer
44399	Data Requirement	Climate Close Match Attributes	The set of climate attributes that are used for close match plant filtering.	43893: Climate Average Annual Precipitation 43898: Climate Growing Season 43895: Climate Minimum Temperature 43897: Climate Last Frost Date 43896: Climate First Frost Date	Must	1	Draft	Climate,Close
43906	Data Requirement	Climate Primary Attributes	The set of climate attributes that are always used for plant filtering.	43893: Climate Average Annual Precipitation 43898: Climate Growing Season 43895: Climate Minimum Temperature 43897: Climate Last Frost Date 43896: Climate First Frost Date	Must	1	Draft	Climate,Primary
44198	Data Requirement	County	The standard set of counties used by NRCS.	44199: County - Valid Values	Must	1	Draft	County
44438	Data Requirement	Design Sketch	A spatial layer that show key design items in a rough sketch format.	44439: Design Sketch - Content 44440: Design Sketch - Boundaries	Should	1	Draft	Sketch

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44166	Data Requirement	Hybrid Imagery	Map imagery. A hybrid map is a satellite map with place names superimposed over the satellite images.	44167: Hybrid Imagery - Valid Values	Must	1	Draft	Imagery
44160	Data Requirement	Hydrologic Unit Layer	A reference layer for hydrologic units. The United States is divided and sub-divided into successively smaller hydrologic units which are classified into four levels: regions, sub-regions, accounting units, and cataloging units. The hydrologic units are arranged or nested within each other, from the largest geographic area (regions) to the smallest geographic area (cataloging units). Each hydrologic unit is identified by a unique hydrologic unit code (HUC) consisting of two to eight digits based on the four levels of classification in the hydrologic unit system.	44161: Hydrologic Unit Layer - Valid Values	Must	1	Draft	Layer

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44165	Data Requirement	Level III Ecoregions Layer	A reference layer for Level II Ecoregions. Ecoregions denote areas of general similarity in ecosystems and in the type, quality, and quantity of environmental resources. They are designed to serve as a spatial framework for the research, assessment, management, and monitoring of ecosystems and ecosystem components. By recognizing the spatial differences in the capacities and potentials of ecosystems, ecoregions stratify the environment by its probable response to disturbance. These general purpose regions are critical for structuring and implementing ecosystem management strategies across federal agencies, state agencies, and nongovernment organizations that are responsible for different types of resources within the same geographical areas.	44164: Level III Ecoregions - Valid Values	Must	1	Draft	Layer
44155	Data Requirement	MLRA	Major land resource areas (MLRAs) are geographically associated land resource units (LRUs). Identification of these large areas is important in statewide agricultural planning and has value in interstate, regional, and national planning.	43941: AOI - MLRA Association 43920: MLRA - Plant Association 44156: MLRA - Valid Values	Must	1	Draft	Layer,MLRA
43924	Data Requirement	MLRA Plant List	The set of plants that are adapted to a MLRA.	43920: MLRA - Plant Association	Must	1	Draft	MLRA,Plants
43909	Data Requirement	NRCS State Plant List	The set of plants by state that have been approved for vegetative planning by the state data steward.	43910: NRCS State - Plant Association	Must	1	Draft	Plants,State

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44267	Data Requirement	Narrative	A set of text of various categories that is to be included in the vegetative plan.	44179: Narrative Text 44275: Plan - Narrative Association 44268: Standard Narrative List - Narrative Association 44175: Narrative Category	Must	1	Draft	Instructions
43919	Data Requirement	PLANTS State Plant List	The set of plants by state that are available for distribution at the NRCS PLANTS web site.	43918: PLANTS State - Plant Association	Must	1	Draft	Plants,State
44163	Data Requirement	PLSS Layer	A reference layer for PLSS. The Public Land Survey System (PLSS) is a way of subdividing and describing land in the United States.	44162: PLSS Layer - Valid Values	Must	1	Draft	Layer
44021	Data Requirement	Plan	The vegetative plan being created.	44361: Plan Objective 44338: Plan County 44022: Plan - Plant Mix Association 44275: Plan - Narrative Association 44337: Plan Tract Number 44313: Plan - Amendment Association 44339: Plan Description of Work 44342: Plan State 44359: Plan Practice 44334: Plan Location 44333: Plan Producer 44430: Plan Purpose 44335: Plan Farm Name 44414: Requested Design Goal 44360: Plan Resource Concerns 44343: Plan Planner 44336: Plan Project Contract	Must	1	Draft	Plan
44362	Data Requirement	Plan Document	The generated plan document generated for the given plan.	44364: Plan Document - Read Only 44365: Plan Document - Save Locally 44368: Plan Document - Versioning 44366: Plan Document - All Content Already Defined 44363: Plan Document - Digital Signatures	Must	1	Draft	PlanDoc

4386 5	Data Requirement	Plant	The set of plant characteristics utilized by VegSpec	43899: Plant Precipitation - Minimum 43875: Plant Salinity Tolerance 44067: Plant Fire Tolerance 44253: Total Sprig Bushels 44111: Plant Low Growing Grass 44100: Plant Bloat 44114: Plant Fruit/Seed Abundance 44041: Plant - Selectable 44108: Plant Foliage Porosity Summer 44206: Propagated By Container 43871: Plant Adapted to Medium Textured Soils 43877: Plant Drainage Class 44103: Plant Growth Form 44132: Total Seed (PLS) Pounds 44212: Propagated By Tuber 44069: Plant Shade Tolerance 43872: Plant Adapted to Fine Textured Soils 44130: Seed (PLS) Pounds per Acre 44235: Total Sod Sq Ft 44207: Propagated By Corms 44115: Plant Toxicity 43943: State - Practice - Plant Association 43960: Climate - Plant Association 43900: Plant Precipitation - Maximum 44118: Plant Fruit/Seed Conspicuous 44159: Plant - Valid Values 44101: Plant Palatable Grazing Animals 44208: Propagated By Cuttings 43920: MLRA - Plant Association 44096: Plant Duration 44112: Plant Flower Color 43918: PLANTS State - Plant Association 44259: Plant Notes 44109: Plant Foliage Porosity Winter 44097: Plant C:N Ratio 44127: Seed per Pound 44106: Plant Foliage Texture 43868: Plant Adapted to Coarse Textured Soils 43957: State - Resource Concern - Plant Association 43901: Plant Temperature - Minimum 44251: Sprig Bushels per Acre 44248: Area Planting Total Plants Each 43974: Plant Growth Habit	Must	1	Draft	Plants
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ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
				44116: Plant Fertility Requirement 43961: Soil - Plant Association 44104: Plant Height at Maturity 43976: Plant Active Growth Period 44209: Propagated By Seed 44119: Plant Fruit/Seed Period Begin 44110: Plant Leaf Retention 44102: Plant Growth Rate 43873: Plant pH - Minimum 44052: Plant Drought Tolerance 44054: Plant CaCO3 Tolerance 44062: Plant Fire Resistant 44408: Plant Temporary Cover 44122: Plant Pollinator 44239: Linear Planting Total Plants Each 44210: Propagated By Sod 44113: Plant Fruit/Seed Color 44099: Plant Known Allelopath 44107: Plant Foliage Color 44044: Plant Anaerobic Tolerance 44120: Plant Fruit/Seed Period End 43902: Plant Frost Free Days - Minimum 44098: Plant Nitrogen Fixation 44204: Propagated By Bare Root 43975: Plant Native Status 44117: Plant Bloom Period 44211: Propagated By Sprig 43876: Plant Root Depth - Minimum 43910: NRCS State - Plant Association 44105: Plant Shape and Orientation 43874: Plant pH - Maximum 44027: Soft Elimination Indicator 44406: Close Match Indicator 44011: Plant Mix Percent 44121: Plant Fruit/Seed Persistence 44245: Area Plant Spacing in Feet 44244: In Row Plant Spacing in Feet 44205: Propagated By Bulbs				

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44013	Data Requirement	Plant Mix	A group of plants that have been selected for inclusion in the vegetative specification.	44005: Plant Mix Type 43970: Seeding Rate 44029: Plant Mix List - Plant Mix Association 44035: Plant Mix - Selectable 44241: Linear Planting Total Linear Feet 44022: Plan - Plant Mix Association 44027: Soft Elimination Indicator 44014: Plant Mix - Plant Association	Must	1	Draft	Mix
44026	Data Requirement	Plant Mix List	The set of available standard plant mixes.	44029: Plant Mix List - Plant Mix Association	Must	1	Draft	Mix
44214	Data Requirement	Plants Primary Attributes	The set of plant attributes can be requested by the user for primary plant filtering. Note: this is any filtering that is done before secondary filtering begins. Filtering on these attributes eliminate plants from the available list.	44420: Design Plant Type - Valid Values 44421: Design Propagation Type - Valid Values	Must	1	Draft	FilterCriteria,Plants,Primary
43992	Data Requirement	Plants Requested Secondary Filtering Attributes	The set of plant attributes can be requested by the user for secondary plant filtering.	44123: Requested Plant Pollinator 44071: Requested Plant Shade Tolerance 43980: Requested Plant Origin 43983: Requested Plant Active Growth Period 44049: Requested Plant Drought Tolerance 44059: Requested Plant Fire Resistant 44057: Requested Plant CaCO3 Tolerance 44047: Requested Plant Anaerobic Tolerance 43977: Requested Plant Type 44064: Requested Plant Fire Tolerance	Must	1	Draft	FilterCriteria,Plants,Secondary

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4218 2	Data Requirement	Point Location Information	The set of attributes to be displayed when the user requests location information for a point on the map.	44169: MLRA Name 42169: State Name 42171: State FIPS Code 42177: Latitude 42178: UTM Coordinates 42172: County Name 44171: Point Location Information - Valid Values 42173: County FIPS Code 42179: Longitude 42180: Township Range Section 42181: MLRA Label 42176: Hydrologic Unit Code 8	Must	1	Draft	Location,Map
4407 9	Data Requirement	Role	A collection of privileges that all users with the given role can perform.	44450: Role - Valid Jurisdictions 44080: Role - Valid Values	Must	1	Draft	Authentication,Authorization,Role
4437 2	Data Requirement	Saved Session	A VegSpec planning session that has been saved for later reuse.	44371: Saved Session - Content 44369: Saved Session - Save Locally 44370: Saved Session - Versioning 44378: Saved Session - Load Full Replacement 44379: Saved Session - Partial Session	Must	1	Draft	Session
4386 4	Data Requirement	Soil	The set of soil characteristics utilized by VegSpec.	43869: Soil Texture Class 43926: AOI - Soils Association 44174: Soil Slope Gradient - High 43574: Soil Salinity 43577: Soil pH 43961: Soil - Plant Association 43581: Soil Texture Group 43559: Soil Drainage Class - Dominant Condition 44157: Soil - Valid Values 43701: Soil Rooting Depth - Minimum 44173: Soil Slope Gradient - Low	Must	1	Draft	Layer,Soils
4440 1	Data Requirement	Soil Close Match Attributes	The set of soils attributes that are used for close match plant filtering.	43577: Soil pH 43559: Soil Drainage Class - Dominant Condition 43701: Soil Rooting Depth - Minimum	Must	1	Draft	Soils

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43890	Data Requirement	Soil Primary Attributes	The set of soil attributes that are always used for plant filtering.	43869: Soil Texture Class 43574: Soil Salinity 43577: Soil pH 43559: Soil Drainage Class - Dominant Condition 43701: Soil Rooting Depth - Minimum	Must	1	Draft	Primary,Soils
43998	Data Requirement	Soils Override Attributes	The set of soil attributes that are optionally used to override the original soil attribute values for plant filtering.	43997: Override Soil pH 43994: Override Soil Salinity	Must	1	Draft	Soils
44299	Data Requirement	Standard Amendment Quantity List	The set of available standard amendment quantities for each amendment type.	44318: Standard Amendment Quantity List - Amendment Quantity Association	Must	1	Draft	Instructions
44298	Data Requirement	Standard Amendment Source List	The set of available standard amendment sources for each amendment type.	44309: Standard Amendment Source List - Amendment Source Association	Must	1	Draft	Instructions
44177	Data Requirement	Standard Narrative List	The set of available standard narratives for each narrative category.	44268: Standard Narrative List - Narrative Association	Must	1	Draft	Instructions
43947	Data Requirement	State	The standard set of states used by NRCS.	43948: State - Valid Values 43943: State - Practice - Plant Association 43918: PLANTS State - Plant Association 43957: State - Resource Concern - Plant Association 43934: AOI - State Association 43910: NRCS State - Plant Association	Must	1	Draft	State
44078	Data Requirement	User	Any user of VegSpec.	44074: User - Role Association 43682: VegSpec User	Must	1	Draft	User
43841	Data Requirement	Vegetative Conservation Practice	An NRCS Conservation Practice that can be used for vegetative purposes.	43952: State - Practice Association 43943: State - Practice - Plant Association 43840: Practice - Resource Concern Association 43031: Vegetative Conservation Practice - Valid Values	Must	1	Draft	Practice
44219	Data Requirement	Vegetative Plan Objective	A set of objectives for the vegetative plan for use by General Planners in lieu of the Resource Concerns that NRCS Planners use.	44221: Resource Concern - Plan Objective Association 44220: Vegetative Plan Objectives - Valid Values	Must	1	Draft	ResConcern

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44387	Data Requirement	Vegetative Reference Data	Reference data used by VegSpec and owned by VegSpec.	44006: Plant Mix Type - Valid Values 44065: Requested Plant Fire Tolerance - Valid Values 44388: Vegetative Reference Data - Versioning 43892: Soil Disturbance Indicator - Valid Values 43877: Plant Drainage Class 44124: Requested Plant Pollinator - Valid Values 43912: NRCS State - Plant Association - Valid Values 44129: Seed (PLS) Pounds per Acre - Valid Values 44130: Seed (PLS) Pounds per Acre 44072: Requested Plant Shade Tolerance - Valid Values 44420: Design Plant Type - Valid Values 44421: Design Propagation Type - Valid Values 44305: Amendment Quantity per Unit - Valid Values 43944: State - Practice - Plant Association - Valid Values 44391: Vegetative Reference Data - Jurisdiction 44389: Vegetative Reference Data - Persisted 44222: Resource Concern - Plan Objective Association - Valid Values 43968: Plant View Option - Valid Values 43923: MLRA - Plant Association - Valid Values 44176: Narrative Category - Valid Values 44271: Standard Narrative List - Narrative Association - Valid Values 43954: State - Resource Concern - Plant Association - Valid Values 43985: Requested Plant Active Growth Period - Valid Values 43845: Practice - Resource Concern Association - Valid Values 44390: Vegetative Reference Data - Content 44297: Amendment Type - Valid Values 42155: Map Extent - Valid Values 44392: Vegetative Reference Data - Approval 44319: Standard Amendment Quantity List -	Must	1	Draft	RefData

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
				Amendment Quantity Association - Valid Values 44220: Vegetative Plan Purposes - Valid Values 43978: Requested Plant Type - Valid Values 44050: Requested Plant Drought Tolerance - Valid Values 43981: Requested Plant Origin - Valid Values 44060: Requested Plant Fire Resistant - Valid Values 44056: Requested Plant CaCO3 Tolerance - Valid Values 43033: Vegetative Resource Concern - Valid Values 44408: Plant Temporary Cover 44122: Plant Pollinator 44046: Requested Plant Anaerobic Tolerance - Valid Values 43031: Vegetative Conservation Practice - Valid Values 44415: Requested Design Goal - Valid Values 44302: Amendment Source - Valid Values 44039: Plant Mix - State Association - Valid Values 44018: Plant Mix - Plant Association - Valid Values - Standard 44312: Standard Amendment Source List - Amendment Source Association - Valid Values				
4384 2	Data Requirement	Vegetative Resource Concern	An NRCS Resource Concern that can be mitigated via vegetative practices.	44221: Resource Concern - Plan Objective Association 43840: Practice - Resource Concern Association 43957: State - Resource Concern - Plant Association 43033: Vegetative Resource Concern - Valid Values	Must	1	Draft	ResConcern

3.3 Association Data Requirements

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43933	Data Requirement	AOI - Climate Association	An AOI has associated Climate.	43930: Climate to AOI - Cardinality 43931: AOI to Climate - Cardinality 43932: AOI - Climate Association - Valid Values	Must	1	Draft	AOI,Climate
44201	Data Requirement	AOI - County Association	An AOI is associated to county.	44200: AOI - County Association - Valid Values 44202: AOI to County - Cardinality 44203: County to AOI - Cardinality 44340: AOI - County Association - When One Value	Must	1	Draft	AOI,County
43941	Data Requirement	AOI - MLRA Association	An AOI is associated to MLRA.	43938: MLRA to AOI - Cardinality 43939: AOI to MLRA - Cardinality 43940: AOI - MLRA Association - Valid Values	Must	1	Draft	AOI,MLRA
43926	Data Requirement	AOI - Soils Association	An AOI has Soils.	43929: Soil to AOI - Cardinality 43927: AOI - Soils Association - Valid Values 43928: AOI to Soil - Cardinality	Must	1	Draft	AOI,Soils
43934	Data Requirement	AOI - State Association	An AOI is associated to state.	44341: AOI - State Association - When One Value 43935: AOI - State Association - Valid Values 43936: AOI to State - Cardinality 43937: State to AOI - Cardinality	Must	1	Draft	AOI,State
43960	Data Requirement	Climate - Plant Association	Plants are associated to climate.	43958: Climate - Plant Association - Valid Values 44404: Climate - Plant Association - Valid Close Match Values 43962: Climate to Plant - Cardinality 43964: Plant to Climate - Cardinality	Must	1	Draft	Climate,Plants
43920	Data Requirement	MLRA - Plant Association	There is an association between each MLRA and the plants that are adapted to each MLRA.	43922: Plant to MLRA - Cardinality 43921: MLRA to Plant - Cardinality 43923: MLRA - Plant Association - Valid Values	Must	1	Draft	MLRA,Plants
43910	Data Requirement	NRCS State - Plant Association	NRCS Data Stewards maintain a list of plants that are approved for each state.	43912: NRCS State - Plant Association - Valid Values 43911: NRCS Plant to State - Cardinality 43913: NRCS State to Plant - Cardinality	Must	1	Draft	Plants,State
43918	Data Requirement	PLANTS State - Plant Association	NRCS PLANTS maintains plant distribution lists for each state.	43915: PLANTS State - Plant Association - Valid Values 43916: PLANTS Plant to State - Cardinality 43917: PLANTS State to Plant - Cardinality	Must	1	Draft	Plants,State

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44313	Data Requirement	Plan - Amendment Association	The set of amendments that are included in the plan.	44314: Amendment to Plan - Cardinality 44315: Plan to Amendment - Cardinality 44316: Plan - Amendments Association - Valid Values	Must	1	Draft	Instructions,Plan
44275	Data Requirement	Plan - Narrative Association	The set of narratives that are included in the plan.	44272: Plan - Narrative Association - Valid Values 44273: Narrative to Plan - Cardinality 44274: Plan to Narrative - Cardinality	Must	1	Draft	Instructions,Plan
44022	Data Requirement	Plan - Plant Mix Association	The primary component of a vegetative plan is the plant mix.	44023: Plant Mix - Plan Association - Valid Values 44024: Plan to Plant Mix - Cardinality 44025: Plant Mix to Plan - Cardinality	Must	1	Draft	Mix,Plan
44228	Data Requirement	Plan Objective - Plant Association	Plan Objectives are associated to Plants via their relationship to Resource Concerns.	44227: Plan Objective - Plant Association - Valid Values	Must	1	Draft	Plants,Purpose
44014	Data Requirement	Plant Mix - Plant Association	Plants are included in plant mixes.	44017: Plant to Plant Mix - Cardinality 44015: Plant Mix - Plant Association - Valid Values - Custom 44016: Plant Mix to Plant - Cardinality 44019: Plant Mix - Plant Association - Mix Totals 100% 44018: Plant Mix - Plant Association - Valid Values - Standard 44011: Plant Mix Percent	Must	1	Draft	Mix,Plants
44040	Data Requirement	Plant Mix - State Association	Standard plant mixes exist at the state level.	44037: Plant Mix to State - Cardinality 44038: State to Plant Mix - Cardinality 44039: Plant Mix - State Association - Valid Values	Must	1	Draft	Mix,State
44029	Data Requirement	Plant Mix List - Plant Mix Association	The list of standard plant mixes that are available at various points in the planning process.	44030: Plant Mix List - Plant Mix Association - Valid Values 44031: Plant Mix List to Plant Mix - Cardinality 44032: Plant Mix to Plant Mix List - Cardinality	Must	1	Draft	Mix
43840	Data Requirement	Practice - Resource Concern Association	The association between practices and resource concerns determine which practices can be used to mitigate a given resource concern.	43844: Resource Concern to Practice - Cardinality 43845: Practice - Resource Concern Association - Valid Values 43843: Practice to Resource Concern - Cardinality	Must	1	Draft	Practice,ResConcern

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44221	Data Requirement	Resource Concern - Plan Objective Association	Plan Objectives are associated with Resource Concerns.	44222: Resource Concern - Plan Objective Association - Valid Values 44223: Plan Objective to Resource Concern - Cardinality 44224: Resource Concern to Plan Objective - Cardinality	Must	1	Draft	Purpose,ResConcern
43961	Data Requirement	Soil - Plant Association	Plants are associated to soil.	43965: Plant to Soil - Cardinality 44403: Soil - Plant Association - Valid Close Match Values 43963: Soil to Plant - Cardinality 43959: Soil - Plant Association - Valid Values	Must	1	Draft	Plants,Soils
44318	Data Requirement	Standard Amendment Quantity List - Amendment Quantity Association	The list of standard amendment quantities that are available for inclusion in the plan.	44319: Standard Amendment Quantity List - Amendment Quantity Association - Valid Values 44320: Standard Amendment Quantity List to Amendment Quantity - Cardinality 44321: Amendemnt Quantity to Standard Amendment Quantity List - Cardinality	Must	1	Draft	Instructions
44309	Data Requirement	Standard Amendment Source List - Amendment Source Association	The list of standard amendment sources that are available for inclusion in the plan.	44312: Standard Amendment Source List - Amendment Source Association - Valid Values 44310: Amendemnt Source to Standard Amendment Source List - Cardinality 44311: Standard Amendment Source List to Amendment Source - Cardinality	Must	1	Draft	Instructions
44268	Data Requirement	Standard Narrative List - Narrative Association	The list of standard narratives that are available for inclusion in the plan.	44270: Narrative to Standard Narrative List - Cardinality 44269: Standard Narrative List to Narrative - Cardinality 44271: Standard Narrative List - Narrative Association - Valid Values	Must	1	Draft	Instructions
43943	Data Requirement	State - Practice - Plant Association	Each state associates plants to practices.	43944: State - Practice - Plant Association - Valid Values 43945: State - Practice to Plant - Cardinality 43946: Plant to State - Practice- Cardinality	Must	1	Draft	Plants,Practice,State
43952	Data Requirement	State - Practice Association	Practices are associated with States.	43949: Practice to State - Cardinality 43950: State to Practice - Cardinality 43951: State - Practice Association - Valid Values	Must	1	Draft	Practice,State

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43957	Data Requirement	State - Resource Concern - Plant Association	Each state associates plants to resource concerns.	43954: State - Resource Concern - Plant Association - Valid Values 43955: Plant to State - Resource Concern - Cardinality 43956: State - Resource Concern to Plant - Cardinality	Must	1	Draft	Plants,ResConcern,State
44074	Data Requirement	User - Role Association	Users have roles within the application.	44075: User to Role - Cardinality 44076: Role to User - Cardinality 44077: User - Role Association - Valid Values	Must	1	Draft	Role,User

3.4 Attribute Data Requirements

3.4.1 AOI & Map Attributes

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
42107	Data Requirement	AOI Geometry	The set of points needed to spatially construct the AOI.	44135: AOI Geometry - Valid Values	Must	1	Draft	AOI,Geometry
42434	Data Requirement	Area Display Units	The units of measure that are used for display to the user for the area of an AOI.	42435: Area Display Units: Valid Values	Must	1	Draft	AOI,Geometry,Measurements
44148	Data Requirement	Calculated AOI Area	The system calculated area of the AOI.	44149: Calculated AOI Area - Valid Values	Must	1	Draft	AOI,Geometry,Measurements
44144	Data Requirement	Calculated Feature Size	The size of the spatial feature based on its geometry.	44145: Calculated Feature Size - Valid Values	Must	1	Draft	AOI,Geometry,Measurements
42110	Data Requirement	Geometry Type	The type of spatial geometry.	42111: Geometry Type - Valid Values	Must	1	Draft	AOI,Geometry
42436	Data Requirement	Length Display Units	The units of measure that are used for display to the user for length of the AOI.	42437: Length Display Units: Valid Values	Must	1	Draft	AOI,Geometry,Measurements

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
42154	Data Requirement	Map Extent	The limit of the geographic area shown on a map, usually defined by a rectangle. In a dynamic map display, the map extent can be changed by zooming and panning. (Source: ESRI)	42155: Map Extent - Valid Values	Must	1	Draft	Extent,Map
44137	Data Requirement	Plan Area	The area to be used for planning purposes.	44134: Plan Area - Valid Values	Must	1	Draft	AOI,Geometry,Measurements
44146	Data Requirement	User AOI Area	The true area of the single part or multi part polygon feature, an override of the system calculated feature size.	44147: User AOI Area - Valid Values	Must	1	Draft	AOI,Geometry,Measurements
44138	Data Requirement	User Line Polygon Length	The true length of the Line Polygon feature, an override of the system calculated feature size.	44140: User Line Polygon Length - Valid Values	Must	1	Draft	AOI,Geometry,Measurements
44143	Data Requirement	User Line Polygon Width	The width of the line for a Line Polygon.	44142: User Line Polygon Width - Valid Values	Must	1	Draft	AOI,Geometry,Measurements
42107	Data Requirement	AOI Geometry	The set of points needed to spatially construct the AOI.	44135: AOI Geometry - Valid Values	Must	1	Draft	AOI,Geometry
42434	Data Requirement	Area Display Units	The units of measure that are used for display to the user for the area of an AOI.	42435: Area Display Units: Valid Values	Must	1	Draft	AOI,Geometry,Measurements
44148	Data Requirement	Calculated AOI Area	The system calculated area of the AOI.	44149: Calculated AOI Area - Valid Values	Must	1	Draft	AOI,Geometry,Measurements
44144	Data Requirement	Calculated Feature Size	The size of the spatial feature based on its geometry.	44145: Calculated Feature Size - Valid Values	Must	1	Draft	AOI,Geometry,Measurements

3.4.2 Climate Attributes

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43893	Data Requirement	Climate Average Annual Precipitation	The average annual precipitation in inches for the site.	41391: Climate System	Must	1	Draft	Climate

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4389 6	Data Requirement	Climate First Frost Date	The first frost date for the site.	41391: Climate System	Must	1	Draft	Climate
4389 8	Data Requirement	Climate Growing Season	The growing season in days for the site, calculated from the last and first frost dates.	43897: Climate Last Frost Date 43896: Climate First Frost Date	Must	1	Draft	Climate
4389 7	Data Requirement	Climate Last Frost Date	The last frost date for the site.	41391: Climate System	Must	1	Draft	Climate
4389 5	Data Requirement	Climate Minimum Temperature	The minimum annual temperature in degrees Fahrenheit for the site.	41391: Climate System	Must	1	Draft	Climate

3.4.3 Soil Attributes

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4399 4	Data Requirement	Override Soil Salinity	Override Soil Salinity is a user provided value to be used instead of the Soil Salinity value.	43995: Override Soil Salinity - Valid Values	Must	1	Draft	Override,Soils
4399 7	Data Requirement	Override Soil pH	Override Soil pH is a user provided value to be used instead of the Soil pH value.	43996: Override Soil pH - Valid Values	Must	1	Draft	Override,Soils
4389 1	Data Requirement	Soil Disturbance Indicator	An indication of whether the soil at the AOI site has been disturbed.	43892: Soil Disturbance Indicator - Valid Values	Must	1	Draft	Soils
4355 9	Data Requirement	Soil Drainage Class - Dominant Condition	The natural drainage condition of the soil refers to the frequency and duration of wet periods. The dominant drainage class for the map unit is based on composition percentage of each map unit component.	41405: NRCS Soils Data Access	Must	1	Draft	Soils

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4370 1	Data Requirement	Soil Rooting Depth - Minimum	Soil Rooting Depth - Minimum is the shallowest rooting depth of components whose composition in the map unit is equal to or exceeds 15%. Note: If this is available directly as a Representative Value that will be used. Otherwise it will be calculated using Bedrock depth and Pan depth attributes.	41405: NRCS Soils Data Access	Must	1	Draft	Soils
4357 4	Data Requirement	Soil Salinity	Soil Salinity refers to the amount of salts in the soil determined by measuring the electrical conductivity (EC) of an extracted soil solution.	41405: NRCS Soils Data Access	Must	1	Draft	Soils
4417 4	Data Requirement	Soil Slope Gradient - High	The high value of the Slope Gradient where Slope Gradient is the difference in elevation between two points, expressed as a percentage of the distance between those points. (SSM)	41405: NRCS Soils Data Access	Must	1	Draft	Soils
4417 3	Data Requirement	Soil Slope Gradient - Low	The low value of the Slope Gradient where Slope Gradient is the difference in elevation between two points, expressed as a percentage of the distance between those points. (SSM)	41405: NRCS Soils Data Access	Must	1	Draft	Soils

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43869	Data Requirement	Soil Texture Class	<p>Soil texture class is a grouping of soils based upon relative proportions of sand, silt, or clay in a soil.</p> <p>The possible values are:</p> <ul style="list-style-type: none"> ● Clay ● Clay loam ● Coarse sand ● Coarse sandy loam ● Fine sand ● Fine sandy loam ● Loam ● Loamy coarse sand ● Loamy find sand ● Loamy sand ● Loamy very find sand ● Sand ● Sandy clay ● Sandy clay loam ● Silt ● Silty clay ● Silty clay loam ● Silt loam ● Sandy loam ● Very fine sand ● Very fine sandy loam - Silt loam 	41405: NRCS Soils Data Access	Must	1	Draft	Soils
43581	Data Requirement	Soil Texture Group	<p>A grouping of soil texture classes by NRCS into three general groups.</p> <p>The possible values are:</p> <ul style="list-style-type: none"> ● Coarse ● Medium ● Fine 	43870: Soil Texture Group - Derivation	Must	1	Draft	Soils

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43577	Data Requirement	Soil pH	Soil pH is the representative value of the pH of the soil. Note: Soil scientists record a single 'representative' value that they think is most typical for the soils in a given map unit.	41405: NRCS Soils Data Access	Must	1	Draft	Soils

3.4.4 Plant Attributes

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44406	Data Requirement	Close Match Indicator	An indicator for each close match attribute that indicates whether or not the given item has been included from the list due to close matching.	44407: Close Match - Visual Indicator 44405: Close Match - Valid Values	Must	1	Draft	Close,Plants
43976	Data Requirement	Plant Active Growth Period	Plants have their most active growth in which seasonal period? Possible values: <ul style="list-style-type: none"> ● Spring ● Spring & Fall ● Spring & Summer ● Spring, Summer & Fall ● Summer ● Summer & Fall ● Fall ● Fall, Winter & Spring ● Year-around 	41357: PLANTS	Must	1	Draft	Plants

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43868	Data Requirement	Plant Adapted to Coarse Textured Soils	<p>Can this plant establish and grow in soil with a coarse textured surface layer?</p> <p>Possible values are:</p> <ul style="list-style-type: none"> • Yes • No 	41357: PLANTS	Must	1	Draft	Plants
43872	Data Requirement	Plant Adapted to Fine Textured Soils	<p>Can this plant establish and grow in soil with a fine textured surface layer?</p> <p>Possible values are:</p> <ul style="list-style-type: none"> • Yes • No 	41357: PLANTS	Must	1	Draft	Plants
43871	Data Requirement	Plant Adapted to Medium Textured Soils	<p>Can this plant establish and grow in soil with a medium textured surface layer?</p> <p>Possible values are:</p> <ul style="list-style-type: none"> • Yes • No 	41357: PLANTS	Must	1	Draft	Plants
44044	Data Requirement	Plant Anaerobic Tolerance	<p>What is the relative tolerance to anaerobic soil conditions?</p> <p>Possible values:</p> <ul style="list-style-type: none"> • None • Low • Medium • High 	41357: PLANTS	Must	1	Draft	Plants

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44100	Data Requirement	Plant Bloat	<p>What is the relative potential of an herbaceous plant to cause bloat in livestock? Woody plants are scored "None" here by default.</p> <p>Possible values:</p> <ul style="list-style-type: none"> • None • Low • Medium • High 	41357: PLANTS	Must	1	Draft	Plants
44117	Data Requirement	Plant Bloom Period	<p>During what seasonal period in the U.S. does the plant bloom the most? The bloom period is defined as the time when pollen is shed and stigmas are receptive.</p> <p>Possible values:</p> <ul style="list-style-type: none"> • Early Spring • Mid Spring • Late Spring • Summer • Early Summer • Mid Summer • Late Summer • Fall • Winter • Late Winter • Indeterminate 	41357: PLANTS	Must	1	Draft	Plants

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44097	Data Requirement	Plant C:N Ratio	<p>C:N ratio is the percentage of organic carbon divided by the percentage of total nitrogen in organic material. We specify the organic material as either the above ground biomass of an herbaceous plant or the above ground herbaceous material of a woody plant. Our relative values correspond to these numerical ranges: Low: <23; Medium: 23 - 59; High: >59.</p> <p>Possible values:</p> <ul style="list-style-type: none"> • Low • Medium • High 	41357: PLANTS	Must	1	Draft	Plants
44054	Data Requirement	Plant CaCO3 Tolerance	<p>What is the relative tolerance to calcareous soil? We define calcareous soil as soil containing sufficient free CaCO3 and other carbonates to effervesce visibly or audibly when treated with cold 0.1M HCl. These soils usually contain from 10 to almost 1000g/kg CaCO3 equivalent.</p> <p>Possible values:</p> <ul style="list-style-type: none"> • None • Low • Medium • High 	41357: PLANTS	Must	1	Draft	Plants
43877	Data Requirement	Plant Drainage Class	<p>An indication of the plant's tolerance to drainage conditions.</p> <p>Possible values:</p> <p>One or more of the same set of values as for Soil Drainage Class</p>	41406: VegSpec Reference Data Tool	Must	1	Draft	Plants,RefData

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4405 2	Data Requirement	Plant Drought Tolerance	<p>What is the relative tolerance of the plant to drought conditions compared to other species with the same growth habit from the same geographical region? Drought tolerance is defined here in the following fashion: Imagine that in an acre of land there are low areas that have heavy soil and tend to accumulate more soil moisture, and higher areas that have coarse textured soil and tend to accumulate less soil moisture. Some plant species are most frequently found growing in the higher areas with the coarse soil texture. These plant species are considered to be more drought tolerant than the species that are frequently found in the low areas with fine textured soil.</p> <p>Possible values:</p> <ul style="list-style-type: none"> ● None ● Low ● Medium ● High 	41357: PLANTS	Must	1	Draft	Plants
4409 6	Data Requirement	Plant Duration	<p>The life cycle of the plant.</p> <p>Possible values:</p> <ul style="list-style-type: none"> ● Annual ● Biennial ● Perennial 	41357: PLANTS	Must	1	Draft	Plants

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44116	Data Requirement	Plant Fertility Requirement	<p>What relative level of nutrition (N, P, K) is required for normal growth and development?</p> <p>Possible values:</p> <ul style="list-style-type: none"> • Low • Medium • High 	41357: PLANTS	Must	1	Draft	Plants
44062	Data Requirement	Plant Fire Resistant	<p>Is the plant known to resist burning? If the plant can carry a fire, and most can, this value will be no. This characteristic is best evaluated with reference to problem fires in California.</p> <p>Possible values:</p> <ul style="list-style-type: none"> • Yes • No 	41357: PLANTS	Must	1	Draft	Plants
44067	Data Requirement	Plant Fire Tolerance	<p>What is the relative ability to resprout, regrow, or reestablish from residual seed after a fire?</p> <p>Possible values:</p> <ul style="list-style-type: none"> • None • Low • Medium • High 	41357: PLANTS	Must	1	Draft	Plants

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4411 2	Data Requirement	Plant Flower Color	<p>What is the predominant color of the flowers?</p> <p>Possible values:</p> <ul style="list-style-type: none"> • Blue • Brown • Green • Orange • Purple • Red • White • Yellow 	41357: PLANTS	Must	1	Draft	Plants
4410 7	Data Requirement	Plant Foliage Color	<p>What is the predominant color of the foliage?</p> <p>Possible values:</p> <ul style="list-style-type: none"> • Dark Green • Green • Gray-Green • Red • White-Gray • Yellow-Green 	41357: PLANTS	Must	1	Draft	Plants
4410 8	Data Requirement	Plant Foliage Porosity Summer	<p>How porous is the foliage during the summer months?</p> <p>Possible values:</p> <ul style="list-style-type: none"> • Porous • Moderate • Dense 	41357: PLANTS	Must	1	Draft	Plants
4410 9	Data Requirement	Plant Foliage Porosity Winter	<p>How porous is the foliage during the winter months?</p> <p>Possible values:</p> <ul style="list-style-type: none"> • Porous • Moderate • Dense 	41357: PLANTS	Must	1	Draft	Plants

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4410 6	Data Requirement	Plant Foliage Texture	<p>What is the general texture of the plant's foliage relative to other species with the same growth habit?</p> <p>Possible values:</p> <ul style="list-style-type: none"> • Fine • Medium • Coarse 	41357: PLANTS	Must	1	Draft	Plants
4390 2	Data Requirement	Plant Frost Free Days - Minimum	<p>The minimum average number of frost-free days within the plant's known geographical range. For cultivars, the geographical range is defined as the area to which the cultivar is well adapted rather than marginally adapted.</p>	41357: PLANTS	Must	1	Draft	Plants
4411 4	Data Requirement	Plant Fruit/Seed Abundance	<p>What is the amount of seed produced by the plant compared to other species with the same growth habit?</p> <p>Possible values:</p> <ul style="list-style-type: none"> • None • Low • Medium • High 	41357: PLANTS	Must	1	Draft	Plants

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44113	Data Requirement	Plant Fruit/Seed Color	<p>What is the predominant and conspicuous color of the mature fruit or seed from a landscaping aesthetics standpoint?</p> <p>Possible values:</p> <ul style="list-style-type: none"> ● Black ● Blue ● Brown ● Green ● Orange ● Purple ● Red ● White ● Yellow 	41357: PLANTS	Must	1	Draft	Plants
44118	Data Requirement	Plant Fruit/Seed Conspicuous	<p>Is the fruit or seed conspicuous from a landscaping aesthetics standpoint?</p> <p>Possible values are:</p> <ul style="list-style-type: none"> ● Yes ● No 	41357: PLANTS	Must	1	Draft	Plants
44119	Data Requirement	Plant Fruit/Seed Period Begin	<p>Season in which the earliest fruit or seed of the fruit/seed period is visually obvious.</p> <p>Possible values:</p> <ul style="list-style-type: none"> ● Spring ● Summer ● Fall ● Winter ● Year-around 	41357: PLANTS	Must	1	Draft	Plants

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44120	Data Requirement	Plant Fruit/Seed Period End	<p>Season in which the latest fruit or seed of the fruit/seed period is visually obvious.</p> <p>Possible values:</p> <ul style="list-style-type: none"> • Spring • Summer • Fall • Winter • Year-around 	41357: PLANTS	Must	1	Draft	Plants
44121	Data Requirement	Plant Fruit/Seed Persistence	<p>Are the fruit or seed generally recognized as being persistent on the plant?</p> <p>Possible values are:</p> <ul style="list-style-type: none"> • Yes • No 	41357: PLANTS	Must	1	Draft	Plants
44103	Data Requirement	Plant Growth Form	<p>What is the primary growth form on the landscape in relation to soil stabilization on slopes and streamsides? Each plant species is assigned the single growth form that most enhances its ability to stabilize soil.</p> <p>Possible values:</p> <ul style="list-style-type: none"> • Bunch: Plant development by intravaginal tillering at or near the soil surface without production of rhizomes or stolons. • Colonizing: A plant that is likely to behave as a colonizer when planted to enhance soil stabilization. • Multiple Stems: Plant development by producing two or more stems. Examples: roundleaf 	41357: PLANTS	Must	1	Draft	Plants

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
			<p>dogwood (<i>Cornus rugosa</i>) and red huckleberry (<i>Vaccinium parvifolium</i>).</p> <ul style="list-style-type: none"> ● Rhizomatous: Plant development by the production of rhizomes which give rise to vegetative spread. ● Single Crown: A herbaceous plant that develops one persistent base. ● Single Stem: Plant development by the production of one stem. Examples: corn (<i>Zea mays</i>) and American beech (<i>Fagus grandifolia</i>). ● Stoloniferous: Plant development by the production of stolons which give rise to vegetative spread. ● Thicket Forming: A plant that is likely to develop thickets when planted to stabilize soil. 					
43974	Data Requirement	Plant Growth Habit	<p>Growth habit refers to the genetic tendency of a plant to grow in a certain shape and to attain a certain mature height and spread.</p> <p>Possible values:</p> <ul style="list-style-type: none"> ● Forb/herb ● Graminoid ● Lichenous ● Nonvascular ● Shrub ● Subshrub ● Tree ● Vine 	41357: PLANTS	Must	1	Draft	Plants

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44102	Data Requirement	Plant Growth Rate	<p>What is the growth rate after successful establishment relative to other species with the same growth habit?</p> <p>Possible values:</p> <ul style="list-style-type: none"> • Slow • Moderate • Rapid 	41357: PLANTS	Must	1	Draft	Plants
44104	Data Requirement	Plant Height at Maturity	<p>Expected height (in feet) of plant at maturity. This is an estimate of the median mature height of all plants of a species or cultivar. Within a species mature height is quite variable, so this estimate is provided only to give a rough idea for planning purposes.</p>	41357: PLANTS	Must	1	Draft	Plants
44099	Data Requirement	Plant Known Allelopath	<p>Has this plant species been shown to be allelopathic to at least one other species?</p> <p>Possible values:</p> <ul style="list-style-type: none"> • Yes • No 	41357: PLANTS	Must	1	Draft	Plants
44110	Data Requirement	Plant Leaf Retention	<p>Does the tree, shrub, or sub-shrub retain its leaves year round? Plants with other growth habits are scored "No" here by default.</p> <p>Possible values:</p> <ul style="list-style-type: none"> • Yes • No 	41357: PLANTS	Must	1	Draft	Plants

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4411 1	Data Requirement	Plant Low Growing Grass	<p>Does the growing point (terminal meristem) of the vegetative grass tiller remain either at or near the crown? Plants other than grasses are scored "No" here by default.</p> <p>Possible values:</p> <ul style="list-style-type: none"> • Yes • No 	41357: PLANTS	Must	1	Draft	Plants
4397 5	Data Requirement	Plant Native Status	<p>An indication of whether or not the plant is native to the United States.</p> <p>Possible values:</p> <ul style="list-style-type: none"> • Native • Introduced • Unknown 	41357: PLANTS	Must	1	Draft	Plants
4409 8	Data Requirement	Plant Nitrogen Fixation	<p>How much nitrogen is fixed by this plant in monoculture? Our relative values correspond to these numerical ranges: None: 0 lb. N/acre/year; 0<Low<85; Medium: 85-160; High: >160.</p> <p>Possible value:</p> <ul style="list-style-type: none"> • None • Low • Medium • High 	41357: PLANTS	Must	1	Draft	Plants
4410 1	Data Requirement	Plant Palatable Grazing Animals	<p>What is the relative palatability of this plant to grazing animals?</p> <p>Possible values:</p> <ul style="list-style-type: none"> • Low • Moderate • High 	41357: PLANTS	Must	1	Draft	Plants

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44122	Data Requirement	Plant Pollinator	Does this plant support pollination? Possible values are: <ul style="list-style-type: none">• Yes• No	41406: VegSpec Reference Data Tool	Must	1	Draft	Plants,RefData
43900	Data Requirement	Plant Precipitation - Maximum	Maximum tolerable rainfall (in inches), expressed as the annual average precipitation of the wettest climate station within the known geographical range of the plant. For cultivars, the geographical range is defined as the area to which the cultivar is well adapted rather than marginally adapted.	41357: PLANTS	Must	1	Draft	Plants
43899	Data Requirement	Plant Precipitation - Minimum	Minimum tolerable rainfall (in inches), expressed as the average annual minimum precipitation that occurs 20% of the time (i.e., the probability of it being this dry in any given year is 20%) at the driest climate station within the known geographical range of the plant. For cultivars, the geographical range is defined as the area to which the cultivar is well adapted rather than marginally adapted.	41357: PLANTS	Must	1	Draft	Plants
43876	Data Requirement	Plant Root Depth - Minimum	The minimum depth of soil (in inches) required for good growth. Plants that do not have roots such as rootless aquatic plants (floating or submerged) and epiphytes are assigned a minimum root depth value of zero.	41357: PLANTS	Must	1	Draft	Plants

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4387 5	Data Requirement	Plant Salinity Tolerance	<p>What is the plant's tolerance to soil salinity? Tolerance to a soil salinity level is defined as only a slight reduction (not greater than 10%) in plant growth. None = tolerant to a soil with an electrical conductivity of the soil solution extract of 0-2 dS/m; Low = tolerant to 2.1-4.0 dS/m; Medium = tolerant to 4.1-8.0 dS/m; High = tolerant to greater than 8.0 dS/m.</p> <p>Possible values are:</p> <ul style="list-style-type: none"> • None • Low • Medium • High 	41357: PLANTS	Must	1	Draft	Plants
4406 9	Data Requirement	Plant Shade Tolerance	<p>What is the relative tolerance to shade conditions?</p> <p>Possible values:</p> <ul style="list-style-type: none"> • Intolerant • Intermediate • Tolerant 	41357: PLANTS	Must	1	Draft	Plants

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44105	Data Requirement	Plant Shape and Orientation	<p>What is the growth form or predominant shape of an individual plant? (This characteristic is especially useful for selecting species for windbreaks.)</p> <p>Possible values:</p> <ul style="list-style-type: none"> ● Climbing ● Columnar ● Conical ● Decumbent ● Erect ● Irregular ● Oval ● Prostrate ● Rounded ● Semi-Erect ● Vase 	41357: PLANTS	Must	1	Draft	Plants
43901	Data Requirement	Plant Temperature - Minimum	<p>The minimum tolerable temperature in degrees Fahrenheit is the lowest temperature recorded in the plant's historical range. If this is not available, the record low January temperature recorded at climate stations within the current geographical range of the plant is used. This definition does not apply to summer annuals.</p>	41357: PLANTS	Must	1	Draft	Plants
44408	Data Requirement	Plant Temporary Cover	<p>Is the plant suitable for temporary covers, such as, quick stabilization, cover crop, etc.?</p> <p>Possible values:</p> <ul style="list-style-type: none"> ● Yes ● No 	41406: VegSpec Reference Data Tool	Must	1	Draft	Plants,RefData

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4411 5	Data Requirement	Plant Toxicity	<p>What is the relative toxicity of the plant to either humans or livestock?</p> <p>Possible values:</p> <ul style="list-style-type: none"> • None • Slight • Moderate • Severe 	41357: PLANTS	Must	1	Draft	Plants
4396 7	Data Requirement	Plant View Option	Subsets of plant characteristics are defined to support different plant purposes so that a user can see attributes that are relevant in making decisions about which plants to select.	43968: Plant View Option - Valid Values	Must	1	Draft	Plants
4387 4	Data Requirement	Plant pH - Maximum	The maximum soil pH, of the top 12 inches of soil, within the plant's known geographical range. For cultivars, the geographical range is defined as the area to which the cultivar is well adapted rather than marginally adapted.	41357: PLANTS	Must	1	Draft	Plants
4387 3	Data Requirement	Plant pH – Minimum	The minimum soil pH, of the top 12 inches of soil, within the plant's known geographical range. For cultivars, the geographical range is defined as the area to which the cultivar is well adapted rather than marginally adapted.	41357: PLANTS	Must	1	Draft	Plants
4420 4	Data Requirement	Propagated By Bare Root	<p>Is it practical to propagate this plant as a bare root product?</p> <p>Possible values:</p> <ul style="list-style-type: none"> • Yes • No 	41357: PLANTS	Must	1	Draft	Plants

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4420 5	Data Requirement	Propagated By Bulbs	Is it practical to propagate this plant as bulbs? Possible values: <ul style="list-style-type: none">• Yes• No	41357: PLANTS	Must	1	Draft	Plants
4420 6	Data Requirement	Propagated By Container	Does the plant lend itself to being developed as a container product? Possible values: <ul style="list-style-type: none">• Yes• No	41357: PLANTS	Must	1	Draft	Plants
4420 7	Data Requirement	Propagated By Corms	Is it practical to propagate this plant as corms? Possible values: <ul style="list-style-type: none">• Yes• No	41357: PLANTS	Must	1	Draft	Plants
4420 8	Data Requirement	Propagated By Cuttings	Is it practical to propagate this plant as either stem or root cuttings? Possible values: <ul style="list-style-type: none">• Yes• No	41357: PLANTS	Must	1	Draft	Plants
4420 9	Data Requirement	Propagated By Seed	Is it practical to propagate this plant by seed? Possible values: <ul style="list-style-type: none">• Yes• No	41357: PLANTS	Must	1	Draft	Plants

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44210	Data Requirement	Propagated By Sod	Does the plant lend itself to being developed as a sod product? Possible values: <ul style="list-style-type: none"> • Yes • No 	41357: PLANTS	Must	1	Draft	Plants
44211	Data Requirement	Propagated By Sprig	Is it practical to propagate this plant by sprigs? Possible values: <ul style="list-style-type: none"> • Yes • No 	41357: PLANTS	Must	1	Draft	Plants
44212	Data Requirement	Propagated By Tuber	Is it practical to propagate this plant by tubers? Possible values: <ul style="list-style-type: none"> • Yes • No 	41357: PLANTS	Must	1	Draft	Plants
43983	Data Requirement	Requested Plant Active Growth Period	The requested active growth period to match against plants.	43984: Requested Plant Active Growth Period - Cardinality 43985: Requested Plant Active Growth Period - Valid Values	Must	1	Draft	Plants
44047	Data Requirement	Requested Plant Anaerobic Tolerance	The requested anaerobic tolerances of desired plants.	44045: Requested Plant Anaerobic Tolerance - Cardinality 44046: Requested Plant Anaerobic Tolerance - Valid Values	Must	1	Draft	Plants
44057	Data Requirement	Requested Plant CaCO3 Tolerance	The requested CaCO3 tolerances of desired plants.	44055: Requested Plant CaCO3 Tolerance - Cardinality 44056: Requested Plant CaCO3 Tolerance - Valid Values	Must	1	Draft	Plants
44049	Data Requirement	Requested Plant Drought Tolerance	The requested drought tolerances of desired plants.	44051: Requested Plant Drought Tolerance - Cardinality 44050: Requested Plant Drought Tolerance - Valid Values	Must	1	Draft	Plants

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44059	Data Requirement	Requested Plant Fire Resistant	The requested value of fire resistant of desired plants.	44060: Requested Plant Fire Resistant - Valid Values 44061: Requested Plant Fire Resistant - Cardinality	Must	1	Draft	Plants
44064	Data Requirement	Requested Plant Fire Tolerance	The requested fire tolerances of desired plants.	44065: Requested Plant Fire Tolerance - Valid Values 44066: Requested Plant Fire Tolerance - Cardinality	Must	1	Draft	Plants
43980	Data Requirement	Requested Plant Origin	The requested Plant Origin for matches with plants.	43981: Requested Plant Origin - Valid Values 43982: Requested Plant Origin - Cardinality	Must	1	Draft	Plants
44123	Data Requirement	Requested Plant Pollinator	The requested indication of whether the desired plant needs to be a pollinator.	44124: Requested Plant Pollinator - Valid Values 44125: Requested Plant Pollinator - Cardinality	Must	1	Draft	Plants
44071	Data Requirement	Requested Plant Shade Tolerance	The requested shade tolerances of desired plants.	44070: Requested Plant Shade Tolerance - Cardinality 44072: Requested Plant Shade Tolerance - Valid Values	Must	1	Draft	Plants
43977	Data Requirement	Requested Plant Type	The requested plant type to be matched against plants.	43978: Requested Plant Type - Valid Values 43979: Requested Plant Type - Cardinality	Must	1	Draft	Plants
44127	Data Requirement	Seed per Pound	How many seeds per pound are in an average seed lot?	41357: PLANTS	Must	1	Draft	Plants
44027	Data Requirement	Soft Elimination Indicator	Indicates whether or not the given item has been eliminated from the list but is still viewable, but not selectable by the user	44028: Soft Elimination Indicator - Valid Values	Must	1	Draft	Plants

3.4.5 Plant Mix Attributes

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44245	Data Requirement	Area Plant Spacing in Feet	The bi-directional, center-to-center spacing between plants, e.g., 10 x 10.	44246: Area Plant Spacing in Feet - Valid Values	Must	1	Draft	Mix
44248	Data Requirement	Area Planting Total Plants Each	The quantity of plants in single units needed by the plan for an area planting.	44247: Area Planting Total Plants Each - Valid Values	Must	1	Draft	Mix

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44244	Data Requirement	In Row Plant Spacing in Feet	The in-row, center-to-center spacing between plants.	44243: In Row Plant Spacing in Feet - Valid Values	Must	1	Draft	Mix
44241	Data Requirement	Linear Planting Total Linear Feet	The total linear feet to be used to determine the plant quantity for a linear planting.	44242: Linear Planting Total Linear Feet - Valid Values	Must	1	Draft	Mix
44239	Data Requirement	Linear Planting Total Plants Each	The quantity of plants in single units needed by the plan for a linear planting.	44240: Linear Planting Total Plants Each - Valid Values	Must	1	Draft	Mix
44011	Data Requirement	Plant Mix Percent	The percentage of seeds for the given plant that will be used in a seeding mix.	44012: Plant Mix Percent - Valid Values	Must	1	Draft	Mix
44005	Data Requirement	Plant Mix Type	An indication of which method the user wishes to use when defining their plant mixes.	44006: Plant Mix Type - Valid Values	Must	1	Draft	Mix
44130	Data Requirement	Seed (PLS) Pounds per Acre	The quantity of pure live seeds (PLS) in pounds required to seed an acre of land.	44129: Seed (PLS) Pounds per Acre - Valid Values 41406: VegSpec Reference Data Tool	Must	1	Draft	Mix,RefData
43970	Data Requirement	Seeding Rate	A factor applied to either increase or decrease the normal amount of seeds.	43971: Seeding Rate - Valid Values	Must	1	Draft	Mix
44251	Data Requirement	Sprig Bushels per Acre	The bushels per acre of sprigs for the plant.	44252: Sprig Bushels per Acre - Valid Values	Must	1	Draft	Mix
44132	Data Requirement	Total Seed (PLS) Pounds	The quantity of pure live seeds (PLS) in pounds to seed the total number of acres in the plan.	44131: Total Seed (PLS) Pounds - Valid Values	Must	1	Draft	Mix
44235	Data Requirement	Total Sod Sq Ft	The required quantity of sod in square feet.	44234: Total Sod Sq Ft - Valid Values	Must	1	Draft	Mix
44253	Data Requirement	Total Sprig Bushels	The quantity of sprigs in bushels needed for the plan.	44254: Total Sprigs Bushels - Valid Values	Must	1	Draft	Mix

3.4.6 Instruction Attributes

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44308	Data Requirement	Amendment Note	Additional notes about the amendment in free form text.		Must	1	Draft	Instructions

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44304	Data Requirement	Amendment Quantity per Unit	The amount of the amendment per unit.	44305: Amendment Quantity per Unit - Valid Values	Must	1	Draft	Instructions
44303	Data Requirement	Amendment Source	The physical or chemical form of the amendment.	44302: Amendment Source - Valid Values 44309: Standard Amendment Source List - Amendment Source Association	Must	1	Draft	Instructions
44296	Data Requirement	Amendment Type	A soil amendment is any material added to a soil to improve its physical properties, such as water retention, permeability, water infiltration, drainage, aeration and structure. The goal is to provide a better environment for roots. A fertilizer is any material of natural or synthetic origin (other than liming materials) that is applied to soils or to plant tissues (usually leaves) to supply one or more plant nutrients essential to the growth of plants.	44297: Amendment Type - Valid Values	Must	1	Draft	Instructions
44175	Data Requirement	Narrative Category	The set of the different narratives used in vegetative planning.	44176: Narrative Category - Valid Values 44289: Narrative Category - No Custom Allowed	Must	1	Draft	Instructions
44179	Data Requirement	Narrative Text	The narrative text for the given narrative.		Must	1	Draft	Instructions
44307	Data Requirement	Total Amendment Quantity	The amount of the amendment for the Plan Area.	44306: Total Amendment Quantity - Valid Values 44318: Standard Amendment Quantity List - Amendment Quantity Association	Must	1	Draft	Instructions

3.4.7 Point Location Attributes

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
42173	Data Requirement	County FIPS Code		44168: Where Am I Service	Must	1	Draft	Location,Map

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4217 2	Data Requirement	County Name		44168: Where Am I Service	Must	1	Draft	Location,Map
4217 6	Data Requirement	Hydrologic Unit Code 8		44168: Where Am I Service	Must	1	Draft	Location,Map
4217 7	Data Requirement	Latitude		44168: Where Am I Service	Must	1	Draft	Location,Map
4217 9	Data Requirement	Longitude		44168: Where Am I Service	Must	1	Draft	Location,Map
4218 1	Data Requirement	MLRA Label		44168: Where Am I Service	Must	1	Draft	Location,Map
4416 9	Data Requirement	MLRA Name		44168: Where Am I Service	Must	1	Draft	Location,Map
4217 1	Data Requirement	State FIPS Code		44168: Where Am I Service	Must	1	Draft	Location,Map
4216 9	Data Requirement	State Name		44168: Where Am I Service	Must	1	Draft	Location,Map
4218 0	Data Requirement	Township Range Section		44168: Where Am I Service	Must	1	Draft	Location,Map
4217 8	Data Requirement	UTM Coordinates			Could	1	Draft	Location,Map, TBD

3.4.8 Other Attributes

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4441 7	Data Requirement	Design Plant Type	The plant types can be used in the plan based on design goal.	44420: Design Plant Type - Valid Values	Must	1	Draft	Plants,Purpose
4442 4	Data Requirement	Design Propagation Type	The propagation types that can be used in the plan based on design goal.	44421: Design Propagation Type - Valid Values	Must	1	Draft	Plants,Purpose
4425 9	Data Requirement	Plant Notes	Additional notes about a plant in a mix.	44258: Plant Note - Valid Values	Must	1	Draft	Plants

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44414	Data Requirement	Requested Design Goal	Identifies the nature of the design. Note: this is used to determine what information needs to be collected from the user so that they proper table can be populated in the generated report document.	44415: Requested Design Goal - Valid Values 44416: Requested Design Goal - Cardinality	Must	1	Draft	Purpose
44338	Data Requirement	Plan County	The county where this plan will be implemented.		Must	1	Draft	County,Plan
44339	Data Requirement	Plan Description of Work	A brief description of the nature of the undertaking defined in this plan.		Must	1	Draft	Plan
44335	Data Requirement	Plan Farm Name	The name of farm where this plan will be implemented.		Must	1	Draft	Plan
44334	Data Requirement	Plan Location	The location of where this plan will be implemented.		Must	1	Draft	Plan
44361	Data Requirement	Plan Objective	Plan objectives are analogous to resource concerns with plan objectives being used by General Planners and Resource Concerns being used by NRCS Planners.		Must	1	Draft	Plan,Purpose
44343	Data Requirement	Plan Planner	The person preparing this plan.	44350: Plan Planner - Valid Values	Must	1	Draft	Plan
44359	Data Requirement	Plan Practice	The practice for which the plan is being created.		Must	1	Draft	Plan,Practice
44333	Data Requirement	Plan Producer	The person or entity this plan is being prepared for.		Must	1	Draft	Plan
44336	Data Requirement	Plan Project Contract	A project name or contract number for this plan.		Must	1	Draft	Plan
44430	Data Requirement	Plan Purpose	A plan purpose is analogous to a practice with plan purpose being used by General Planners and Practices being used by NRCS Planners. This serves as the title in the plan document.		Must	1	Draft	Plan,Purpose
44360	Data Requirement	Plan Resource Concerns	The resource concerns being addressed by this plan.		Must	1	Draft	Plan,ResConcern
44342	Data Requirement	Plan State	The state where this plan will be implemented.		Must	1	Draft	Plan,State

ID	Artifact Type	Name	Definition	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4433 7	Data Requirement	Plan Tract Number	The tract number of where this plan will be implemented.		Must	1	Draft	Plan

3.5 Business Rules

3.5.1 Overview

3.5.1.1 Key Points

- Business rules are the heart of the requirements. They define what behavior is allowed, how calculations are to be done, etc.
- Business rules can be applied to Entities, Attributes and Associations.
- There are some common kinds of business rules, these include:
 - The rules for how valid values are determined
 - The cardinality rules for associations, these can correlate back whether a value is required or optional in a user interface
- Some of the business rules are specified via Decision Tables. These can be found in a separate section. The given rule will have a reference in the Rule text of 'See Decision Table' when this case applies.

3.5.1.2 Missing Requirement Detail

- Only as needed to support gaps in the Functional Requirements Section.

3.5.1.3 Items Requiring Attention from Business SMEs

- Several business rules define ranges. These need to be reviewed and adjusted as needed.

3.5.2 Entity Level Business Rules

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44158	Business Rule	Climate - Valid Values	The valid values for Climate in the Climate System.	41391: Climate System	Must	1	Draft	Climate
44199	Business Rule	County - Valid Values	The valid values for county are defined in the 41393: NRCS Enterprise Reference Data (NRT).		Must	1	Draft	County
44440	Business Rule	Design Sketch - Boundaries	The boundaries of a design sketch will be the same as the AOI.		Must	1	Draft	Sketch
44439	Business Rule	Design Sketch - Content	The content of a design sketch will include: <ul style="list-style-type: none"> Points, Lines & Polygons (rectangle, circle, multi-point) Annotations 		Must	1	Draft	Sketch
44167	Business Rule	Hybrid Imagery - Valid Values	The valid values for hybrid map imagery are found using the Map Imagery Service.	44154: Map Imagery Service	Must	1	Draft	Imagery
44161	Business Rule	Hydrologic Unit Layer - Valid Values	The valid values for Hydrologic Unit reference layer are found using the Hydrologic Unit service.	44151: Hydrologic Unit Service	Must	1	Draft	Layer
44164	Business Rule	Level III Ecoregions - Valid Values	The valid values for Level III Ecoregions reference layer are managed in the NRT. The NRT is updated from Ecoregion data at EPA.	41393: NRCS Enterprise Reference Data (NRT) 44152: EPA Level III Ecoregion Data	Must	1	Draft	Layer
44156	Business Rule	MLRA - Valid Values	The valid values for MLRA are managed in the NRT. The NRT is updated from MLRA data at data.gov.	41393: NRCS Enterprise Reference Data (NRT) 44150: MLRA Data	Must	1	Draft	MLRA
44162	Business Rule	PLSS Layer - Valid Values	The valid values for the PLSS reference layer are found using the PLSS service.	44153: PLSS Service	Must	1	Draft	Layer
44366	Business Rule	Plan Document - All Content Already Defined	All content for the plan document should already exist prior to generation, that is, no inline, in document editing is expected.		Must	1	Draft	PlanDoc
44363	Business Rule	Plan Document - Digital Signatures	The plan document shall support digital signatures.		Must	1	Draft	PlanDoc
44364	Business Rule	Plan Document - Read Only	The plan document shall be readonly after generation.		Must	1	Draft	PlanDoc

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44365	Business Rule	Plan Document - Save Locally	The user shall be able to save the plan document to their own storage resources.		Must	1	Draft	PlanDoc
44368	Business Rule	Plan Document - Versioning	The Plan Document shall include the following version information: <ul style="list-style-type: none"> Version of the VegSpec application Version of the National Reference Data utilized in generating the plan Version of the State Reference Data utilized in generating the plan 		Must	1	Draft	PlanDoc
44041	Business Rule	Plant - Selectable	A Plant in the available plant list is selectable when the Soft Elimination Indicator is false.		Must	1	Draft	Plants
44159	Business Rule	Plant - Valid Values	The valid values for Plants are found in the PLANTS system.	41357: PLANTS	Must	1	Draft	Plants
44035	Business Rule	Plant Mix - Selectable	A Plant Mix in the Plant Mix List is selectable when the Soft Elimination Indicator is false and the Plant Mix Type is standard.		Must	1	Draft	Mix
44171	Business Rule	Point Location Information - Valid Values	Valid values are determined using the Where Am I service for the specified latitude and longitude for the desired attributes that it provides. Other attributes will be derived as needed. Refer to specific rules for each attribute.	44168: Where Am I Service	Must	1	Draft	Location,Map
44450	Business Rule	Role - Valid Jurisdictions	The valid jurisdictions for the VegSpec roles are: <ul style="list-style-type: none"> Each Planner Role - No jurisdictions enforced Each Data Steward Role - Access to one or more sets of reference data, either national or state level 		Must	1	Draft	Authorization, Role

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44080	Business Rule	Role - Valid Values	<p>The valid roles within VegSpec are as follows. The roles are hierarchical, that is, some with a given child role has all authorizations of parent as well.</p> <ul style="list-style-type: none"> 43681: VegSpec Planner 43583: NRCS Planner 43884: General Planner 43835: General Planner - Authenticated 43585: General Planner - Unauthenticated 41389: Data Steward 44448: Data Steward - Approver 44447: Data Steward - Author 	<p>43681: VegSpec Planner 41389: Data Steward 43835: General Planner - Authenticated 43884: General Planner 44447: Data Steward - Author 44448: Data Steward - Approver 43583: NRCS Planner 43585: General Planner - Unauthenticated</p>	Must	1	Draft	Authentication, Authorization, Role
44371	Business Rule	Saved Session - Content	<p>The Saved Session shall include the following content:</p> <ul style="list-style-type: none"> User input values Values used in calculations Calculated values <p>Note: some discussion is likely needed to determine when/if keys are sufficient in some cases and when full record contents is needed.</p>		Must	1	Draft	Session
44378	Business Rule	Saved Session - Load Full Replacement	When a saved session is loaded it will fully replace the existing session except for the planner information for authenticated users.		Must	1	Draft	Session
44379	Business Rule	Saved Session - Partial Session	The user shall be able to save a partial session.		Must	1	Draft	Session
44369	Business Rule	Saved Session - Save Locally	The user shall be able to save a VegSpec session to their own storage resources.		Must	1	Draft	Session

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44370	Business Rule	Saved Session - Versioning	<p>The Saved Session shall include the following version information:</p> <ul style="list-style-type: none"> • Version of the VegSpec application • Version of the National Reference Data utilized in generating the plan • Version of the State Reference Data utilized in generating the plan 		Must	1	Draft	Session
44157	Business Rule	Soil - Valid Values	<p>The valid values for Soils are using the Soils Data Access services which provide access to SSURGO data.</p>	41405: NRCS Soils Data Access	Must	1	Draft	Soils
43948	Business Rule	State - Valid Values	<p>The valid values for state are as follows and represent the set of states defined in the 41393: NRCS Enterprise Reference Data (NRT).</p> <p>Alabama, Alaska, American Samoa, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Fed. States of Micronesia, Florida, Georgia, Guam, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Marshall Islands, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Northern Mariana Islands, Ohio, Oklahoma, Oregon, Palau, Pennsylvania, Puerto Rico, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, U.S. Minor Outlying Islands, Utah, Vermont, Virgin Islands, Virginia, Washington, West Virginia, Wisconsin, Wyoming</p>	41393: NRCS Enterprise Reference Data (NRT)	Must	1	Draft	State

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43031	Business Rule	Vegetative Conservation Practice - Valid Values	The valid subset of Conservation Practices for vegetative planning are managed in the 41406: VegSpec Reference Data Tool by a National Data Steward.	41406: VegSpec Reference Data Tool	Must	1	Draft	Practice
44220	Business Rule	Vegetative Plan Objectives - Valid Values	The valid values for Vegetative Plan Objectives are maintained by data stewards in the 41406: VegSpec Reference Data Tool.	41406: VegSpec Reference Data Tool	Must	1	Draft	Purpose,ResConcern
44392	Business Rule	Vegetative Reference Data - Approval	Reference data modifications are to be approved before they are published.		Must	1	Draft	RefData
44390	Business Rule	Vegetative Reference Data - Content	Vegetative reference data falls in two categories: <ul style="list-style-type: none"> • Data that is managed by data stewards via a web application. • Data that is modified via database scripts. This is typically data that does not change often, such as the available seeding rates, 1.0, 1.25, 1.5, etc. 		Must	1	Draft	RefData
44391	Business Rule	Vegetative Reference Data - Jurisdiction	Data stewards are limited to reference data by state and/or national jurisdiction.		Must	1	Draft	RefData
44389	Business Rule	Vegetative Reference Data - Persisted	Vegetative reference data shall be persisted.		Must	1	Draft	RefData
44388	Business Rule	Vegetative Reference Data - Versioning	State and national reference data shall be versioned whenever updates are published. This applies both the data managed by stewards as well as data this only maintained in the database.		Must	1	Draft	RefData
43033	Business Rule	Vegetative Resource Concern - Valid Values	The valid subset of Resource Concerns for vegetative planning are managed in the 41406: VegSpec Reference Data Tool by National Data Stewards.	41406: VegSpec Reference Data Tool	Must	1	Draft	ResConcern

3.5.3 Association Level Business Rules

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4393 2	Business Rule	AOI - Climate Association - Valid Values	The valid values for Climate are those that spatially intersect with the AOI. Note: depending on the source of the climate data the spatial boundaries for climate may be part of the climate data or they may be derived from other associations such as climate stations being associated with counties and then the spatial boundaries of the counties are used for the spatial intersect.		Must	1	Draft	AOI,Climate
4420 0	Business Rule	AOI - County Association - Valid Values	The valid values for county are those that spatially intersect with the AOI.		Must	1	Draft	AOI,County
4434 0	Business Rule	AOI - County Association - When One Value	When there is only one county associated with the AOI that county will be the Plan County.	44338: Plan County	Must	1	Draft	AOI,County
4394 0	Business Rule	AOI - MLRA Association - Valid Values	The valid values for MLRA are those that spatially intersect with the AOI.		Must	1	Draft	AOI,MLRA
4392 7	Business Rule	AOI - Soils Association - Valid Values	The valid values for Soil Map Units are those that spatially intersect with the AOI.		Must	1	Draft	AOI,Soils
4393 5	Business Rule	AOI - State Association - Valid Values	The valid values for state are those that spatially intersect with the AOI.		Must	1	Draft	AOI,State
4434 1	Business Rule	AOI - State Association - When One Value	When there is only one state associated with the AOI then that state is the Plan State.	44342: Plan State	Must	1	Draft	AOI,State
4393 1	Business Rule	AOI to Climate - Cardinality	An AOI is associated with zero or more climate attribute sets. (Where a climate attribute set is for a given climate station or it may be an interpolation.)		Must	1	Draft	AOI,Climate
4420 2	Business Rule	AOI to County - Cardinality	An AOI is associated with one or more counties.		Must	1	Draft	AOI,County
4393 9	Business Rule	AOI to MLRA - Cardinality	An AOI is associated with one or more MLRAs.		Must	1	Draft	AOI,MLRA

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43928	Business Rule	AOI to Soil - Cardinality	An AOI is associated with zero or more Soil Map Units.		Must	1	Draft	AOI,Soils
43936	Business Rule	AOI to State - Cardinality	An AOI is associated with one or more states.		Must	1	Draft	AOI,State
44321	Business Rule	Amendemnt Quantity to Standard Amendment Quantity List - Cardinality	Standard amendment quantities are included in the standard amendment quantity list for one or more amendment types.		Must	1	Draft	Instructions
44310	Business Rule	Amendemnt Source to Standard Amendment Source List - Cardinality	Standard amendment sources are included in the standard amendment source list for one or more amendment types.		Must	1	Draft	Instructions
44314	Business Rule	Amendment to Plan - Cardinality	An amendment is included in one and only one plan.		Must	1	Draft	Instructions,Plan
44404	Business Rule	Climate - Plant Association - Valid Close Match Values	The valid close match values for plants associated with climate are determined by close matching climate characteristics to plant characteristics.	44397: Filter Plant by Climate Minimum Temperature - Close Match 44398: Filter Plant by Climate Growing Days - Close Match 44396: Filter Plant by Climate Precipitation - Close Match	Must	1	Draft	Climate,Close,FilterCriteria,Plants
43958	Business Rule	Climate - Plant Association - Valid Values	The valid values for plants associated with climate are determined by matching climate characteristics to plant characteristics. Note: Climate characteristics are not necessarily all matched at the same time; some may be required, some optional as specified by other rules and/or requirements.	43905: Filter Plant by Climate Growing Days 43903: Filter Plant by Climate Precipitation 44400: Plant - Close Match Climate Characteristics - Any Match 43907: Plant - Primary Climate Characteristics - All Required 43904: Filter Plant by Climate Minimum Temperature	Must	1	Draft	Climate,Plants
43930	Business Rule	Climate to AOI - Cardinality	A climate attribute set is associated with zero or more AOIs. (Where a climate attribute set is for a given climate station or it may be an interpolation.)		Must	1	Draft	AOI,Climate
43962	Business Rule	Climate to Plant - Cardinality	A set of climate characteristics can support zero or more plants.		Must	1	Draft	Climate,Plants
44203	Business Rule	County to AOI - Cardinality	A county is associated with zero or more AOIs.		Must	1	Draft	AOI,County

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43905	Business Rule	Filter Plant by Climate Growing Days	A plant meets the Climate Growing Season Days criteria when the Climate Growing Season Days is greater than or equal to the Plant Frost Free Days.	43898: Climate Growing Season 43902: Plant Frost Free Days - Minimum	Must	1	Draft	Climate,FilterCriteria,Plants,Primary
44398	Business Rule	Filter Plant by Climate Growing Days - Close Match	For close match, allow 5% variation, i.e. if Growing Season is 180 days, allow plants with Frost Free Minimum of 189 days to be included.	43898: Climate Growing Season 43902: Plant Frost Free Days - Minimum	Must	1	Draft	Climate,Close,FilterCriteria,Plants
43904	Business Rule	Filter Plant by Climate Minimum Temperature	A plant meets the Climate Minimum Temperature criteria when the Climate Temperature - Minimum is greater than or equal to the Plant Temperature - Minimum.	43901: Plant Temperature - Minimum 43895: Climate Minimum Temperature	Must	1	Draft	Climate,FilterCriteria,Plants,Primary
44397	Business Rule	Filter Plant by Climate Minimum Temperature - Close Match	For close match, allow 10% lower temperature than what the plant characteristic is, i.e. if plant char is 25 F then allow climate data to min temp of 22.5 F.	43901: Plant Temperature - Minimum 43895: Climate Minimum Temperature	Must	1	Draft	Climate,Close,FilterCriteria,Plants
43903	Business Rule	Filter Plant by Climate Precipitation	A plant meets the Climate Precipitation criteria when the Climate Average Annual Precipitation is greater than or equal to the Plant Precipitation Minimum and is less than or equal to the Plant Precipitation Maximum.	43899: Plant Precipitation - Minimum 43893: Climate Average Annual Precipitation 43900: Plant Precipitation - Maximum	Must	1	Draft	Climate,FilterCriteria,Plants,Primary
44396	Business Rule	Filter Plant by Climate Precipitation - Close Match	For close match, allow 10% above and below plant characteristic values, i.e. plant char. value is 15-30" precipitation, match to climate values of 13.5-33" precipitation.	43899: Plant Precipitation - Minimum 43893: Climate Average Annual Precipitation 43900: Plant Precipitation - Maximum	Must	1	Draft	Climate,Close,FilterCriteria,Plants

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43988	Business Rule	Filter Plant by Plant Type	<p>A plant meets the Plant Type (either Requested or based on Design Goal) criteria when any of the following conditions are met:</p> <ul style="list-style-type: none"> PLANTS Growth Habit matches any of the Requested Plant Type values as shown in the mapping table below And, if the Plant Type is Legume then the plant must also match on TBD <p>See Decision Table</p>	<p>43974: Plant Growth Habit 44417: Design Plant Type 43977: Requested Plant Type</p>	Must	1	Draft	FilterCriteria,Plants,Primary,Secondary,TBD
44213	Business Rule	Filter Plant by Propagation Type	<p>A plant meets the Propagation Type criteria when any of the following conditions are met:</p> <ul style="list-style-type: none"> Plant Propagated By Bare Root is Yes AND Propagation Type is Bare Root Plant Propagated By Bulbs is Yes AND Propagation Type is Bulbs Plant Propagated By Container is Yes AND Propagation Type is Container Plant Propagated By Corms is Yes AND Propagation Type is Corms Plant Propagated By Cuttings is Yes AND Propagation Type is Cuttings Plant Propagated By Seed is Yes AND Propagation Type is Seed Plant Propagated By Sod is Yes AND Propagation Type is Sod Plant Propagated By Sprigs is Yes AND Propagation Type is Springs Plant Propagated By Tubers is Yes AND Propagation Type is Tubers 	<p>44206: Propagated By Container 44212: Propagated By Tuber 44424: Design Propagation Type 44207: Propagated By Corms 44208: Propagated By Cuttings 44209: Propagated By Seed 44210: Propagated By Sod 44204: Propagated By Bare Root 44211: Propagated By Sprig 44205: Propagated By Bulbs</p>	Must	1	Draft	FilterCriteria,Plants,Primary

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43991	Business Rule	Filter Plant by Requested Plant Active Growth Period	A plant meets the Requested Plant Active Growth Period criteria when any of the following conditions are met: See Decision Table		Must	1	Draft	FilterCriteria,Plants,Secondary
44048	Business Rule	Filter Plant by Requested Plant Anaerobic Tolerance	A plant meets the Requested Plant Anaerobic Tolerance criteria when the Plant Anaerobic Tolerance matches one of the Requested Anaerobic Tolerances.	44044: Plant Anaerobic Tolerance 44047: Requested Plant Anaerobic Tolerance	Must	1	Draft	FilterCriteria,Plants,Secondary
44058	Business Rule	Filter Plant by Requested Plant CaCO3 Tolerance	A plant meets the Requested Plant CaCO3 Tolerance criteria when the Plant CaCO3 Tolerance matches one of the Requested CaCO3 Tolerances.	44054: Plant CaCO3 Tolerance 44057: Requested Plant CaCO3 Tolerance	Must	1	Draft	FilterCriteria,Plants,Secondary
44053	Business Rule	Filter Plant by Requested Plant Drought Tolerance	A plant meets the Requested Plant Drought Tolerance criteria when the Plant Drought Tolerance matches one of the Requested Drought Tolerances.	44049: Requested Plant Drought Tolerance 44052: Plant Drought Tolerance	Must	1	Draft	FilterCriteria,Plants,Secondary
44063	Business Rule	Filter Plant by Requested Plant Fire Resistant	A plant meets the Requested Plant Fire Resistant criteria when the Plant Fire Resistant matches the specified value of Requested Fire Resistant.	44059: Requested Plant Fire Resistant 44062: Plant Fire Resistant	Must	1	Draft	FilterCriteria,Plants,Secondary
44068	Business Rule	Filter Plant by Requested Plant Fire Tolerance	A plant meets the Requested Plant Fire Tolerance criteria when the Plant Fire Tolerance matches one of the Requested Plant Fire Tolerances.	44067: Plant Fire Tolerance 44064: Requested Plant Fire Tolerance	Must	1	Draft	FilterCriteria,Plants,Secondary
43990	Business Rule	Filter Plant by Requested Plant Origin	A plant meets the Requested Plant Origin criteria when any of the following conditions are met: <ul style="list-style-type: none"> Requested Plant Origin is Native Only and PLANTS Native Status Type is Native Requested Plant Origin is Native & Introduced and PLANTS Native Status Type is Native or Introduced 	43980: Requested Plant Origin 43975: Plant Native Status	Must	1	Draft	FilterCriteria,Plants,Secondary
44126	Business Rule	Filter Plant by Requested Plant Pollinator	A plant meets the Requested Plant Pollinator criteria when the Plant Pollinator matches the Requested Plant Pollinator.	44123: Requested Plant Pollinator 44122: Plant Pollinator	Must	1	Draft	FilterCriteria,Plants,Secondary

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44073	Business Rule	Filter Plant by Requested Plant Shade Tolerance	A plant meets the Requested Plant Shade Tolerance criteria when the Plant Shade Tolerance matches one of the Requested Plant Shade Tolerances.	44069: Plant Shade Tolerance 44071: Requested Plant Shade Tolerance	Must	1	Draft	FilterCriteria,Plants,Secondary
43882	Business Rule	Filter Plant by Soil Drainage Class	A plant shall meet the Soil Drainage Class criteria when at least one Plant Drainage Class is equal to the Soil Drainage Class.	43877: Plant Drainage Class 43559: Soil Drainage Class - Dominant Condition	Must	1	Draft	FilterCriteria,Plants,Primary,Soils
44395	Business Rule	Filter Plant by Soil Drainage Class - Close Match	For close match, allow plants to be adapted to one drainage class above and one drainage class below to make a match to soil characteristic.	43877: Plant Drainage Class 43559: Soil Drainage Class - Dominant Condition	Must	1	Draft	Close,FilterCriteria,Plants,Soils
43881	Business Rule	Filter Plant by Soil Rooting Depth	A plant shall meet the Soil Rooting Depth criteria when Plant Root Depth - Minimum is less than or equal to the Soil Rooting Depth - Minimum.	43876: Plant Root Depth - Minimum 43701: Soil Rooting Depth - Minimum	Must	1	Draft	FilterCriteria,Plants,Primary,Soils
44394	Business Rule	Filter Plant by Soil Rooting Depth - Close Match	For close match, allow plants to show up which are 20% more than soil rooting depth, i.e. if soil rooting depth is 25" allow close match to plants with 30" rooting depth.	43876: Plant Root Depth - Minimum 43701: Soil Rooting Depth - Minimum	Must	1	Draft	Close,FilterCriteria,Plants,Soils
43880	Business Rule	Filter Plant by Soil Salinity	A plant shall meet the Soil Salinity criteria when any of the following conditions are true: See Decision Table	43875: Plant Salinity Tolerance 43574: Soil Salinity	Must	1	Draft	FilterCriteria,Plants,Primary,Soils

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43878	Business Rule	Filter Plant by Soil Texture	<p>A plant meets the Soil Texture criteria when any of the following conditions are met:</p> <ul style="list-style-type: none"> Plant Adapted to Fine Textured Soils is Yes AND Soil Texture Class is mapped to Fine in the mapping table below. Plant Adapted to Medium Textured Soils is Yes AND Soil Texture Class is mapped Medium in the mapping table below. Plant Adapted to Coarse Textured Soils is Yes AND Soil Texture Class is mapped Coarse in the mapping table below. <p>See Decision Table</p>	<p>43869: Soil Texture Class 43871: Plant Adapted to Medium Textured Soils 43872: Plant Adapted to Fine Textured Soils 43868: Plant Adapted to Coarse Textured Soils</p>	Must	1	Draft	FilterCriteria,Plants,Primary,Soils
43879	Business Rule	Filter Plant by Soil pH	A plant meets the Soil pH criteria when the Soil pH is greater than or equal to the Plant pH Minimum and is less than or equal to the Plant pH Maximum.	<p>43577: Soil pH 43873: Plant pH - Minimum 43874: Plant pH - Maximum</p>	Must	1	Draft	FilterCriteria,Plants,Primary,Soils
44393	Business Rule	Filter Plant by Soil pH - Close Match	For close match, allow 0.5 pH points beyond the min and max plant characteristic.	<p>43577: Soil pH 43873: Plant pH - Minimum 43874: Plant pH - Maximum</p>	Must	1	Draft	Close,FilterCriteria,Plants,Soils
44411	Business Rule	Filter Plant by Temporary Cover	A plant meets the Temporary Cover criteria when the Plant Temporary Cover is Yes and Design Goal is 'Temporary Herbaceous Seeding / Planting'.	<p>44408: Plant Temporary Cover 44414: Requested Design Goal</p>	Must	1	Draft	FilterCriteria,Plants,Primary
43923	Business Rule	MLRA - Plant Association - Valid Values	The valid values for the MLRA to Plant association is in the 41406: Vegetative Reference Data Management Application.	41406: VegSpec Reference Data Tool	Must	1	Draft	MLRA,Plants,RefData
43938	Business Rule	MLRA to AOI - Cardinality	A MLRA is associated with zero or more AOIs.		Must	1	Draft	AOI,MLRA
43921	Business Rule	MLRA to Plant - Cardinality	A MLRA has one or more associated plants.		Must	1	Draft	MLRA,Plants
43911	Business Rule	NRCS Plant to State - Cardinality	A plant is approved for use by zero or more NRCS data stewards.		Must	1	Draft	Plants,State

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43912	Business Rule	NRCS State - Plant Association - Valid Values	The valid values for the plants approved by NRCS state data stewards are maintained in the 41406: Vegetative Reference Data Management Application.	41406: VegSpec Reference Data Tool	Must	1	Draft	Plants,RefData,State
43913	Business Rule	NRCS State to Plant - Cardinality	A state has one or more plants approved by NRCS data stewards.		Must	1	Draft	Plants,State
44273	Business Rule	Narrative to Plan - Cardinality	A standard narrative is included in zero or more plans. A custom narrative is included in one and only one plan.		Must	1	Draft	Instructions,Plan
44270	Business Rule	Narrative to Standard Narrative List - Cardinality	Standard narratives are included in the standard narrative list.		Must	1	Draft	Instructions
43916	Business Rule	PLANTS Plant to State - Cardinality	A plant is included in zero or more PLANTS State Distribution Maps.		Must	1	Draft	Plants,State
43915	Business Rule	PLANTS State - Plant Association - Valid Values	The valid values for the PLANTS State Distribution Lists are found here: PLANTS State Distribution List.	http://plants.usda.gov/dl_nrnc_state_plants.html	Must	1	Draft	Plants,State
43917	Business Rule	PLANTS State to Plant - Cardinality	A state has one or more associated plants in the PLANTS State Distribution Map.		Must	1	Draft	Plants,State
44316	Business Rule	Plan - Amendments Association - Valid Values	The set of plan amendments is determined by the user.		Must	1	Draft	Instructions,Plan
44272	Business Rule	Plan - Narrative Association - Valid Values	The set of plan narratives is determined by the user.		Must	1	Draft	Instructions,Plan
44227	Business Rule	Plan Objective - Plant Association - Valid Values	The valid values for plants associated with plan objectives is determined using the State - Resource Concern - Plant Association. To determine the Resource Concerns for the Plan Objectives use the Plan Objectives to Resource Concern Association. For the State use the single state value used for AOI filtering.	44221: Resource Concern - Plan Objective Association 43954: State - Resource Concern - Plant Association - Valid Values	Must	1	Draft	Plants,Purpose
44223	Business Rule	Plan Objective to Resource Concern - Cardinality	A plan objective is associated with one and only one resource concern.		Must	1	Draft	Purpose,ResConcern

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44315	Business Rule	Plan to Amendment - Cardinality	A plan will include zero or one amendment for each amendment type.		Must	1	Draft	Instructions,Plan
44274	Business Rule	Plan to Narrative - Cardinality	A plan will include zero or more narratives for each category.		Must	1	Draft	Instructions,Plan
44024	Business Rule	Plan to Plant Mix - Cardinality	A plan will include one and only one plant mix.		Must	1	Draft	Mix,Plan
44400	Business Rule	Plant - Close Match Climate Characteristics - Any Match	For each close match attribute where the primary match failed, determine if the plant meets the close match criteria. When the plant meets at least one close match criteria include it in the plant list.	44399: Climate Close Match Attributes	Must	1	Draft	Climate,Close,FilterCriteria,Plants
44402	Business Rule	Plant - Close Match Soil Characteristics - Any Match	For each close match attribute where the primary match failed, determine if the plant meets the close match criteria. When the plant meets at least one close match criteria include it in the plant list.	44401: Soil Close Match Attributes	Must	1	Draft	Close,FilterCriteria,Plants,Soils
43907	Business Rule	Plant - Primary Climate Characteristics - All Required	A plant must meet all of the primary climate criteria to be included in the available plant list.	43906: Climate Primary Attributes	Must	1	Draft	Climate,FilterCriteria,Plants,Primary
44217	Business Rule	Plant - Primary Plant Characteristic Association - Valid Values	The valid values for plants associated with requested plant characteristics are determined by matching requested plant characteristics to PLANTS plant characteristics. Note: These characteristics are not necessarily all matched at the same time; some may be required, some optional as specified by other rules and/or requirements.	43988: Filter Plant by Plant Type 44213: Filter Plant by Propagation Type 44411: Filter Plant by Temporary Cover 44215: Plant - Primary Plant Characteristics - Based on Design Goal	Must	1	Draft	FilterCriteria,Plants,Primary
44215	Business Rule	Plant - Primary Plant Characteristics - Based on Design Goal	The Design Goal of the plan will determine which matching rules are to be applied.	44214: Plants Primary Attributes	Must	1	Draft	FilterCriteria,Plants,Primary
43883	Business Rule	Plant - Primary Soil Characteristics - All Required	A plant must meet all of the primary soil criteria to be included in the available plant list.	43890: Soil Primary Attributes	Must	1	Draft	FilterCriteria,Plants,Primary,Soils

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43989	Business Rule	Plant - Secondary Plant Characteristic Association - Valid Values	<p>The valid values for plants associated with requested plant characteristics are determined by matching requested plant characteristics to PLANTS plant characteristics.</p> <p>Note: These characteristics are not necessarily all matched at the same time; some may be required, some optional as specified by other rules and/or requirements.</p>	<p>44007: Plant - Secondary Plant Characteristics - Soft Elimination</p> <p>43990: Filter Plant by Requested Plant Origin</p> <p>43988: Filter Plant by Plant Type</p> <p>44048: Filter Plant by Requested Plant Anaerobic Tolerance</p> <p>44058: Filter Plant by Requested Plant CaCO3 Tolerance</p> <p>44053: Filter Plant by Requested Plant Drought Tolerance</p> <p>44068: Filter Plant by Requested Plant Fire Tolerance</p> <p>44063: Filter Plant by Requested Plant Fire Resistant</p> <p>44073: Filter Plant by Requested Plant Shade Tolerance</p> <p>43991: Filter Plant by Requested Plant Active Growth Period</p> <p>43993: Plant - Secondary Plant Characteristics - Required When Provided</p>	Must	1	Draft	FilterCriteria,Plants,Secondary
43993	Business Rule	Plant - Secondary Plant Characteristics - Required When Provided	A plant must meet all of the secondary plant criteria that have been provided to be included in the available plant list.		Must	1	Draft	FilterCriteria,Plants,Secondary
44007	Business Rule	Plant - Secondary Plant Characteristics - Soft Elimination	Plants that do not meet secondary plant characteristic criteria should be marked as such but not removed from the list.		Must	1	Draft	Plants
44023	Business Rule	Plant Mix - Plan Association - Valid Values	The Plant Mix included in a plan is determined by the user.		Must	1	Draft	Mix,Plan
44019	Business Rule	Plant Mix - Plant Association - Mix Totals 100%	The Plant Mix Percentage of the plants in a Plant Mix must total 100%.	44011: Plant Mix Percent	Must	1	Draft	Mix,Plants
44015	Business Rule	Plant Mix - Plant Association - Valid Values - Custom	The set of plant within a custom plant mix are determined by the user from the set of plants that have met the filtering criteria.		Must	1	Draft	Mix,Plants

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44018	Business Rule	Plant Mix - Plant Association - Valid Values - Standard	The set of plants within a standard plant mix are managed by the state data stewards in the 41406: Vegetative Reference Data Management Application.	41406: VegSpec Reference Data Tool	Must	1	Draft	Mix,Plants,Ref Data
44039	Business Rule	Plant Mix - State Association - Valid Values	The set of approved standard plant mixes for each state are managed by a state data steward in 41406: Vegetative Reference Data Management Application.	41406: VegSpec Reference Data Tool	Must	1	Draft	Mix,RefData,State
44030	Business Rule	Plant Mix List - Plant Mix Association - Valid Values	The set of standard plant mixes that are in the plant mix list is determined by comparing the plant mix set of plants to the available plant list using the criteria defined below. See Decision Table	44039: Plant Mix - State Association - Valid Values	Must	1	Draft	Mix
44031	Business Rule	Plant Mix List to Plant Mix - Cardinality	A Plant Mix List will include zero or more standard plant mixes.		Must	1	Draft	Mix
44025	Business Rule	Plant Mix to Plan - Cardinality	A standard plant mix may be included in zero or more plans. A custom plant mix is contained in one and only one plan.		Must	1	Draft	Mix,Plan
44016	Business Rule	Plant Mix to Plant - Cardinality	A plant mix can contain one or more plants.		Must	1	Draft	Mix,Plants
44032	Business Rule	Plant Mix to Plant Mix List - Cardinality	A standard plant mix may or may not be included in the standard Plant Mix List.		Must	1	Draft	Mix
44037	Business Rule	Plant Mix to State - Cardinality	A standard plant mix belongs to one and only one state.		Must	1	Draft	Mix,State
43964	Business Rule	Plant to Climate - Cardinality	A plant can be adapted to zero or more sets of climate characteristics.		Must	1	Draft	Climate,Plants
43922	Business Rule	Plant to MLRA - Cardinality	A plant is associated with zero or more MLRAs.		Must	1	Draft	MLRA,Plants
44017	Business Rule	Plant to Plant Mix - Cardinality	A plant may be included in zero or more plant mixes.		Must	1	Draft	Mix,Plants
43965	Business Rule	Plant to Soil - Cardinality	A plant can be adapted to zero or more sets of soil characteristics.		Must	1	Draft	Plants,Soils

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43946	Business Rule	Plant to State - Practice-Cardinality	A plant is associated with zero or more vegetative practices for each state.		Must	1	Draft	Plants,Practice,State
43955	Business Rule	Plant to State - Resource Concern - Cardinality	A plant is associated with zero or more vegetative resource concerns for each state.		Must	1	Draft	Plants,ResConcern,State
43845	Business Rule	Practice - Resource Concern Association - Valid Values	The valid values for Vegetative Conservation Practice association to Vegetative Resource Concerns will be managed by a National Data Steward in the 41406: Vegetative Reference Data Management Application.	41406: VegSpec Reference Data Tool	Must	1	Draft	Practice,RefData,ResConcern
43843	Business Rule	Practice to Resource Concern - Cardinality	A vegetative practice can mitigate one or more vegetative resource concerns.		Must	1	Draft	Practice,ResConcern
43949	Business Rule	Practice to State - Cardinality	A practice is associated with zero or more states.		Must	1	Draft	Practice,State
44222	Business Rule	Resource Concern - Plan Objective Association - Valid Values	The valid values for the association between a resource concern and a plan objective are maintained in 41406: VegSpec Reference Data Tool.	41406: VegSpec Reference Data Tool	Must	1	Draft	Purpose,RefData,ResConcern
44224	Business Rule	Resource Concern to Plan Objective - Cardinality	A resource concern is associated with one or more plan objectives.		Must	1	Draft	Purpose,ResConcern
43844	Business Rule	Resource Concern to Practice - Cardinality	A vegetative resource concern can be mitigated by one or more vegetative practices.		Must	1	Draft	Practice,ResConcern
44076	Business Rule	Role to User - Cardinality	A role is held by zero or more users.		Must	1	Draft	Role,User
44403	Business Rule	Soil - Plant Association - Valid Close Match Values	The valid close match values for plants associated with soils are determined by close matching soil characteristics to plant characteristics.	44395: Filter Plant by Soil Drainage Class - Close Match 44394: Filter Plant by Soil Rooting Depth - Close Match 44393: Filter Plant by Soil pH - Close Match	Must	1	Draft	Close,FilterCriteria,Plants,Soils

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43959	Business Rule	Soil - Plant Association - Valid Values	The valid values for plants associated with soils are determined by matching soil characteristics to plant characteristics. Note: Soil characteristics are not necessarily all matched at the same time; some may be required, some optional as specified by other rules and/or requirements.	43881: Filter Plant by Soil Rooting Depth 43883: Plant - Primary Soil Characteristics - All Required 44402: Plant - Close Match Soil Characteristics - Any Match 43878: Filter Plant by Soil Texture 43879: Filter Plant by Soil pH 43882: Filter Plant by Soil Drainage Class 43880: Filter Plant by Soil Salinity	Must	1	Draft	Plants,Soils
43929	Business Rule	Soil to AOI - Cardinality	A Soil Map Unit is associated with zero or more AOIs.		Must	1	Draft	AOI,Soils
43963	Business Rule	Soil to Plant - Cardinality	A set of soil characteristics can support zero or more plants.		Must	1	Draft	Plants,Soils
44319	Business Rule	Standard Amendment Quantity List - Amendment Quantity Association - Valid Values	The standard set of amendment quantities is managed in 41406: VegSpec Reference Data Tool.	41406: VegSpec Reference Data Tool	Must	1	Draft	Instructions,RefData
44320	Business Rule	Standard Amendment Quantity List to Amendment Quantity - Cardinality	A standard amendment quantity list will include one or more amendment quantities for each amendment type.		Must	1	Draft	Instructions
44312	Business Rule	Standard Amendment Source List - Amendment Source Association - Valid Values	The standard set of amendment sources is managed in 41406: VegSpec Reference Data Tool.	41406: VegSpec Reference Data Tool	Must	1	Draft	Instructions,RefData
44311	Business Rule	Standard Amendment Source List to Amendment Source - Cardinality	A standard amendment source list will include one or more amendment sources for each amendment type.		Must	1	Draft	Instructions

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44271	Business Rule	Standard Narrative List - Narrative Association - Valid Values	The standard set of narratives for Operations & Maintenance category is managed by 43953: Conservation Practice Standards System (CPS). The standard narratives for other categories is managed by data stewards in the 41406: VegSpec Reference Data Tool.	43953: Conservation Practice Standards System (CPS) 41406: VegSpec Reference Data Tool	Must	1	Draft	Instructions,RefData
44269	Business Rule	Standard Narrative List to Narrative - Cardinality	A standard narrative list will include one or more narratives for each category.		Must	1	Draft	Instructions
43944	Business Rule	State - Practice - Plant Association - Valid Values	The valid values for plants associated with practices is managed in 41406: Vegetative Reference Data Management Application by State Data Stewards. The association is maintained at the state level.	41406: VegSpec Reference Data Tool	Must	1	Draft	Plants,Practice,RefData,State
43951	Business Rule	State - Practice Association - Valid Values	The valid values for the association between a state and a practice are maintained in 43953: Conservation Practice Standards System (CPS) and are available in the 41393: NRCS Enterprise Reference Data (NRT).	43953: Conservation Practice Standards System (CPS) 41393: NRCS Enterprise Reference Data (NRT)	Must	1	Draft	Practice,State
43945	Business Rule	State - Practice to Plant - Cardinality	Each vegetative practice for each state is associated with zero or more plants.		Must	1	Draft	Plants,Practice,State
43954	Business Rule	State - Resource Concern - Plant Association - Valid Values	The valid values for plants associated with resource concerns is managed in 41406: Vegetative Reference Data Management Application by State Data Stewards. The association is maintained at the state level.	41406: VegSpec Reference Data Tool	Must	1	Draft	Plants,RefData,ResConcern,State
43956	Business Rule	State - Resource Concern to Plant - Cardinality	Each vegetative resource concern for each state is associated with zero or more plants.		Must	1	Draft	Plants,ResConcern,State
43937	Business Rule	State to AOI - Cardinality	A state is associated with zero or more AOIs.		Must	1	Draft	AOI,State
44038	Business Rule	State to Plant Mix - Cardinality	A state may have zero or more standard plant mixes.		Must	1	Draft	Mix,State

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
43950	Business Rule	State to Practice - Cardinality	A state is associated with zero or more practices.		Must	1	Draft	Practice,State
44077	Business Rule	User - Role Association - Valid Values	User roles are determined using the following criteria. Role assignments include associated jurisdictions where appropriate. See Decision Table.		Must	1	Draft	Role,User
44075	Business Rule	User to Role - Cardinality	A user has one or more roles.		Must	1	Draft	Role,User

3.5.4 Attribute Level Business Rules

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44135	Business Rule	AOI Geometry - Valid Values	The spatial geometry of the AOI is determined by the user.		Must	1	Draft	AOI,Geometry
42435	Business Rule	Area Display Units: Valid Values	The valid display units for the area of an AOI are: <ol style="list-style-type: none"> 1. Acres 2. Square Feet <ol style="list-style-type: none"> a. When acres is less than one tenth of an acre then the value must be displayed in square feet. 		Must	1	Draft	AOI,Geometry,Measurements

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44149	Business Rule	Calculated AOI Area - Valid Values	<p>The calculated area of an AOI is determined as follows:</p> <ul style="list-style-type: none"> • Polygon - Single Part - From the calculated feature size of the polygon • Polygon - Multi Part - From the calculated feature size of the polygon • Line Polygon - From the calculated feature size of the line, which is then multiplied by the user entered width 		Must	1	Draft	AOI,Geometry,Measurements
44145	Business Rule	Calculated Feature Size - Valid Values	<p>The calculated size of the AOI feature is determined as follows:</p> <ul style="list-style-type: none"> • Polygon - Single Part - From the geometry of the polygon • Polygon - Multi Part - From the geometry of the polygons • Line Polygon - From the geometry of the line 		Must	1	Draft	AOI,Geometry,Measurements
42111	Business Rule	Geometry Type - Valid Values	<p>The valid values for Geometry Type shall be:</p> <ul style="list-style-type: none"> • Line Polygon (line geometry with a user specified width and user specified line orientation) • Polygon - single part - This includes user entered shapes of rectangles, circles, multi-point polygons, donut polygons, etc. • Polygon - multi part 		Must	1	Draft	AOI,Geometry
42437	Business Rule	Length Display Units: Valid Values	<p>The valid display units for length of the AOI are:</p> <ol style="list-style-type: none"> 1. Linear Feet 		Must	1	Draft	AOI,Geometry,Measurements

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
42155	Business Rule	Map Extent - Valid Values	<p>The valid values for the map extent are:</p> <ul style="list-style-type: none"> ● Contiguous US ● Alaska ● Hawaii ● Pacific Basin <ul style="list-style-type: none"> ○ American Samoa ○ Federated States of Micronesia ○ Guam ○ Marshall islands ○ Palau ○ Northern Mariana Islands ● Puerto Rico ● Virgin Islands 	41406: VegSpec Reference Data Tool	Must	1	Draft	Extent,Map
44134	Business Rule	Plan Area - Valid Values	<p>The actual area for planning purposes is determined as follows:</p> <ul style="list-style-type: none"> ● Polygon - Single Part - From the user entered value for area of the AOI ● Polygon - Multi Part - From the user entered value for area of the AOI ● Line Polygon - From the user entered value for the length of the line, which is then multiplied by the user entered width 		Must	1	Draft	AOI,Geometry,Measurements
44147	Business Rule	User AOI Area - Valid Values	<p>A value entered by the user.</p> <p>Valid values depend on the units:</p> <ul style="list-style-type: none"> ● When 'acres' then a decimal from 0.1 to 9,999.9 ● When 'sq ft' then an integer from 1 to 435,595,644 		Must	1	Draft	AOI,Geometry,Measurements
44140	Business Rule	User Line Polygon Length - Valid Values	<p>An integer from 1 to 99,999 entered by the user.</p>		Must	1	Draft	AOI,Geometry,Measurements

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44142	Business Rule	User Line Polygon Width - Valid Values	An integer from 1 to 99,999 entered by the user.		Must	1	Draft	AOI,Geometry,Measurements
43995	Business Rule	Override Soil Salinity - Valid Values	The valid values for Override Soil Salinity fall in a range from 0-8 dS/m.		Must	1	Draft	Override,Soils
43996	Business Rule	Override Soil pH - Valid Values	The valid values for Override Soil pH fall in a range from 0-14.		Must	1	Draft	Override,Soils
43892	Business Rule	Soil Disturbance Indicator - Valid Values	The valid values for the Soil Disturbance Indicator are: <ul style="list-style-type: none"> • Yes • No 	41406: VegSpec Reference Data Tool	Must	1	Draft	Soils
43870	Business Rule	Soil Texture Group - Derivation	Soil texture group is derived from Soil Texture Class using the following mapping. See Decision Table.	43869: Soil Texture Class	Must	1	Draft	Soils
44405	Business Rule	Close Match - Valid Values	The valid values for each close match attribute are: <ul style="list-style-type: none"> • True • False 		Must	1	Draft	Close,Plants
44407	Business Rule	Close Match - Visual Indicator	A visual indicator shall be provided for each attribute with a successful close match.		Must	1	Draft	Close,Plants
43968	Business Rule	Plant View Option - Valid Values	The valid subsets of plant characteristics from which a user can select are: <ul style="list-style-type: none"> • Cover and Green Manure Crop <ul style="list-style-type: none"> ○ Duration ○ C:N Ratio ○ Nitrogen Fixation ○ Known Allelopathy ○ Bloat ○ Palatable Grazing Animals ○ Growth Rate • Soil Stabilization 	41406: VegSpec Reference Data Tool	Must	1	Draft	Plants

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
			<ul style="list-style-type: none"> ○ Duration ○ Growth Form ○ Height at Maturity ○ Growth Rate ○ Shape and Orientation ○ Foliage Texture ○ Foliage Porosity Summer ○ Foliage Porosity Winter ○ Leaf Retention ○ Low Growing Grass ● Buffers to include windbreaks (woody, herbaceous, mixed) <ul style="list-style-type: none"> ○ Duration ○ Growth Form ○ Height at Maturity ○ Growth Rate ○ Shape and Orientation ○ Foliage Texture ○ Flower Color ○ Foliage Color ○ Fruit/Seed Color ○ Fruit/Seed Abundance ● Livestock Use <ul style="list-style-type: none"> ○ Bloat ○ Growth Rate ○ Toxicity ○ Fertility Requirements ○ Bloom Period ○ Palatable Grazing Animals 					

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
			<ul style="list-style-type: none"> ● Wildlife <ul style="list-style-type: none"> ○ Fruit/Seed Abundance ○ Fruit/Seed Color ○ Fruit/Seed Conspicuous ○ Fruit/Seed Period Begin ○ Fruit/Seed Period End ○ Fruit/Seed Persistence ○ Growth Form ○ Pollinator ○ Bloom Period ○ Flower Color ○ Fruit/Seed Abundance ● Tree/Shrub Establishment, Windbreak/Hedge <ul style="list-style-type: none"> ○ Height at Maturity ○ Foliage Porosity Summer ○ Foliage Porosity Winter ○ Leaf Retention ○ Shape and Orientation 					
4398 4	Business Rule	Requested Plant Active Growth Period - Cardinality	There may be zero or more Requested Plant Active Growth Period values.		Must	1	Draft	Plants
4398 5	Business Rule	Requested Plant Active Growth Period - Valid Values	The possible values are: <ul style="list-style-type: none"> ● Winter ● Spring ● Summer ● Fall 	41406: VegSpec Reference Data Tool	Must	1	Draft	Plants

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44045	Business Rule	Requested Plant Anaerobic Tolerance - Cardinality	There may be zero or more Requested Plant Anaerobic Tolerance values.		Must	1	Draft	Plants
44046	Business Rule	Requested Plant Anaerobic Tolerance - Valid Values	The possible values are: <ul style="list-style-type: none"> None Low Medium High 	41406: VegSpec Reference Data Tool	Must	1	Draft	Plants
44055	Business Rule	Requested Plant CaCO3 Tolerance - Cardinality	There may be zero or more Requested Plant CaCO3 Tolerance values.		Must	1	Draft	Plants
44056	Business Rule	Requested Plant CaCO3 Tolerance - Valid Values	The possible values are: <ul style="list-style-type: none"> None Low Medium High 	41406: VegSpec Reference Data Tool	Must	1	Draft	Plants
44051	Business Rule	Requested Plant Drought Tolerance - Cardinality	There may be zero or more Requested Plant Drought Tolerance values.		Must	1	Draft	Plants
44050	Business Rule	Requested Plant Drought Tolerance - Valid Values	The possible values are: <ul style="list-style-type: none"> None Low Medium High 	41406: VegSpec Reference Data Tool	Must	1	Draft	Plants
44061	Business Rule	Requested Plant Fire Resistant - Cardinality	There may be zero or one Requested Plant Fire Resistant values.		Must	1	Draft	Plants
44060	Business Rule	Requested Plant Fire Resistant - Valid Values	The possible values are: <ul style="list-style-type: none"> Yes No 	41406: VegSpec Reference Data Tool	Must	1	Draft	Plants
44066	Business Rule	Requested Plant Fire Tolerance - Cardinality	There may be zero or more Requested Plant Fire Tolerance values.		Must	1	Draft	Plants

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44065	Business Rule	Requested Plant Fire Tolerance - Valid Values	The possible values are: <ul style="list-style-type: none"> None Low Medium High 	41406: VegSpec Reference Data Tool	Must	1	Draft	Plants
43982	Business Rule	Requested Plant Origin - Cardinality	There may be zero or one Requested Plant Origin values.		Must	1	Draft	Plants
43981	Business Rule	Requested Plant Origin - Valid Values	The possible values are: <ul style="list-style-type: none"> Native Only Native & Introduced 	41406: VegSpec Reference Data Tool	Must	1	Draft	Plants
44125	Business Rule	Requested Plant Pollinator - Cardinality	There may be zero or one Requested Plant Pollinator values.		Must	1	Draft	Plants
44124	Business Rule	Requested Plant Pollinator - Valid Values	The possible values are: <ul style="list-style-type: none"> Yes No 	41406: VegSpec Reference Data Tool	Must	1	Draft	Plants
44070	Business Rule	Requested Plant Shade Tolerance - Cardinality	There may be zero or more Requested Plant Shade Tolerance values.		Must	1	Draft	Plants
44072	Business Rule	Requested Plant Shade Tolerance - Valid Values	The possible values are: <ul style="list-style-type: none"> Intolerant Intermediate Tolerant 	41406: VegSpec Reference Data Tool	Must	1	Draft	Plants
43979	Business Rule	Requested Plant Type - Cardinality	There may be zero or more Requested Plant Type values.		Must	1	Draft	Plants
43978	Business Rule	Requested Plant Type - Valid Values	The possible values are: <ul style="list-style-type: none"> Grass Legume Forb/Wildflower Shrub Tree 	41406: VegSpec Reference Data Tool	Must	1	Draft	Plants
44028	Business Rule	Soft Elimination Indicator - Valid Values	The valid values are: <ul style="list-style-type: none"> True False 		Must	1	Draft	Plants

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44246	Business Rule	Area Plant Spacing in Feet - Valid Values	The valid value is a decimal from 0.1 to 99.9. Note: tenths of a foot exist for the smaller spacing needs of propagation types like bulbs.		Must	1	Draft	Mix
44247	Business Rule	Area Planting Total Plants Each - Valid Values	This value is determined by multiplying (Plan Area by Plant Mix Percent) and dividing that amount by (Area Plant Spacing in Feet squared).	44137: Plan Area 44011: Plant Mix Percent 44245: Area Plant Spacing in Feet	Must	1	Draft	Mix
44243	Business Rule	In Row Plant Spacing in Feet - Valid Values	The valid value is a decimal from 0.1 to 99.9. Note: tenths of a foot exist for the smaller spacing needs of propagation types like bulbs.		Must	1	Draft	Mix
44242	Business Rule	Linear Planting Total Linear Feet - Valid Values	The valid value is an integer from 1 to 999,999.		Must	1	Draft	Mix
44240	Business Rule	Linear Planting Total Plants Each - Valid Values	This value is determined by multiplying (Linear Planting Total Linear Feet by Plant Mix Percent) and dividing that amount by In Row Plant Spacing in Feet.	44241: Linear Planting Total Linear Feet 44011: Plant Mix Percent 44244: In Row Plant Spacing in Feet	Must	1	Draft	Mix
44012	Business Rule	Plant Mix Percent - Valid Values	The valid values for plant mix percent are a percentage from 0 to 100.		Must	1	Draft	Mix
44006	Business Rule	Plant Mix Type - Valid Values	The valid values for plant mix type are: <ul style="list-style-type: none"> Standard (User selects from predefined plant mixes.) Custom (User selects plants from the list and puts in plant percentages.) 	41406: VegSpec Reference Data Tool	Must	1	Draft	Mix
44129	Business Rule	Seed (PLS) Pounds per Acre - Valid Values	The valid values for Seed (PLS) Pounds per Acre are a decimal from 0.01 to 999,999.99. These values are managed by a data steward in the 41406: VegSpec Reference Data Tool.	41406: VegSpec Reference Data Tool	Must	1	Draft	Mix,RefData

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
4397 1	Business Rule	Seeding Rate - Valid Values	The valid values are: <ul style="list-style-type: none"> • (default) • 0.25 • 0.50 • 0.75 • 1.25 • 1.50 • 1.75 • 2.00 		Must	1	Draft	Mix
4425 2	Business Rule	Sprig Bushels per Acre - Valid Values	The valid value is a decimal from 1 to 999.		Must	1	Draft	Mix
4413 1	Business Rule	Total Seed (PLS) Pounds - Valid Values	The valid values for Total Seed (PLS) Pounds are a decimal from 0.01 to 999,999.99. This value is determined by multiplying Seed (PLS) Pounds per Acre by Plan Area by Plant Mix Percent by Seeding Rate.	43970: Seeding Rate 44130: Seed (PLS) Pounds per Acre 44137: Plan Area 44011: Plant Mix Percent	Must	1	Draft	Mix
4423 4	Business Rule	Total Sod Sq Ft - Valid Values	The value is determined by multiplying Plan Area by Plant Mix Percent, converting Plan area to sq ft as needed.	44137: Plan Area 44011: Plant Mix Percent	Must	1	Draft	Mix
4425 4	Business Rule	Total Sprigs Bushels - Valid Values	This value is determined by multiplying (Plan Area by Plant Mix Percent) and dividing that amount by (Sprig Bushels per Acre).	44137: Plan Area 44251: Sprig Bushels per Acre 44011: Plant Mix Percent	Must	1	Draft	Mix
4430 5	Business Rule	Amendment Quantity per Unit - Valid Values	The standard values are maintained in the 41406: VegSpec Reference Data Tool. The user may also provide a custom value.	41406: VegSpec Reference Data Tool	Must	1	Draft	Instructions,RefData
4430 2	Business Rule	Amendment Source - Valid Values	The standard values are maintained in the 41406: VegSpec Reference Data Tool. The user may also provide a custom value.	41406: VegSpec Reference Data Tool	Must	1	Draft	Instructions,RefData
4429 7	Business Rule	Amendment Type - Valid Values	The valid values for maintained in the 41406: VegSpec Reference Data Tool.	41406: VegSpec Reference Data Tool	Must	1	Draft	Instructions,RefData

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44289	Business Rule	Narrative Category - No Custom Allowed	<p>Custom Narratives are not allowed for the following categories. This includes both entering a custom narrative from scratch as well as modifying a standard narrative.</p> <ul style="list-style-type: none"> • Operations & Maintenance 		Must	1	Draft	Instructions
44176	Business Rule	Narrative Category - Valid Values	<p>The valid values are:</p> <ul style="list-style-type: none"> • Site Preparation Earthmoving • Seedbed Preparation • Method of Seedbed Preparation • Method of Seeding/Planting/Sodding • Mulch Requirements • Temporary Storage Instructions • Planting Time • Current Vegetation or Site Condition • Operations & Maintenance • Other Notes or Requirements 	41406: VegSpec Reference Data Tool	Must	1	Draft	Instructions
44306	Business Rule	Total Amendment Quantity - Valid Values	The Total Amendment Quantity is determined by multiplying the Amendment Quantity per Unit by Plan Area (in acres).		Must	1	Draft	Instructions
44420	Business Rule	Design Plant Type - Valid Values	<p>The valid values are based on a given design goal as follows:</p> <p>See Decision Table.</p>	41406: VegSpec Reference Data Tool	Must	1	Draft	Plants,Purpose
44421	Business Rule	Design Propagation Type - Valid Values	<p>The valid values are based on a given design goal as follows:</p> <p>See Decision Table.</p>	41406: VegSpec Reference Data Tool	Must	1	Draft	Plants,Purpose
44258	Business Rule	Plant Note - Valid Values	The valid values are entered by the user.		Must	1	Draft	Plants
44416	Business Rule	Requested Design Goal - Cardinality	A plan will have one and only one design goal.		Must	1	Draft	Purpose

ID	Artifact Type	Name	Rule	Link To	Business Priority	Planned Business Phase	Req Status	Tags
44415	Business Rule	Requested Design Goal - Valid Values	<p>The valid values are:</p> <ul style="list-style-type: none"> • Permanent Herbaceous Seeding / Planting • Temporary Herbaceous Seeding / Planting • Riparian Planting • Woody Area Planting • Windbreak / Hedgerow Planting • Sodding 	41406: VegSpec Reference Data Tool	Must	1	Draft	Purpose

3.6 Business Rule - Decision Tables

3.6.1 Overview

3.6.1.1 Key Points

- Some of the business rules are specified via Decision Tables. These are found in this section. The given rule will have a reference in the Rule text of 'See Decision Table' when this case applies.

3.6.1.2 Missing Requirement Detail

- None known

3.6.1.3 Items Requiring Attention from Business SMEs

- None known

3.6.2 43988 Business Rule - Filter Plant by Plant Type

PLANTS Growth Habit	Plant Type
Graminoid	Grass
Forb/herb	Forb/Wildflower
Shrub	Shrub
Subshrub	Shrub
Tree	Tree
Forb/herb	Legume

3.6.3 43991 Business Rule - Filter Plant by Requested Plant Active Growth Period

Conditions	Rules								
	R1	R2	R3	R4	R5	R6	R7	R8	R9
Site Plant Active Growth Period									
Spring	x	x	x	x				x	x
Summer			x	x	x	x			x
Fall		x		x		x	x	x	x
Winter								x	x
PLANTS Active Growth Period									
Spring	x								
Spring & Fall		x							
Spring & Summer			x						
Spring, Summer & Fall				x					
Summer					x				
Summer & Fall						x			
Fall							x		
Fall, Winter & Spring								x	
Year-round									x
Actions									
Include in Plant List	x	x	x	x	x	x	x	x	x

3.6.4 43880 Business Rule - Filter Plant by Soil Salinity

Conditions	Rules			
	R1	R2	R3	R4
Plant Salinity Tolerance				
None	x			
Low		x		
Medium			x	
High				x
Soil Salinity				
0-2 dS/m	x	x	x	x
2.1-4.0 dS/m		x	x	x
4.1 - 8.0 dS/m			x	x
> 8.0 dS/m				x
Actions				
Include Plant in List	x	x	x	x

3.6.5 43878 Business Rule - Filter Plant by Soil Texture

Surface Texture Group	Surface Texture Class
Coarse	Coarse Sand
Coarse	Fine Sand
Coarse	Loamy Coarse Sand
Coarse	Loamy Fine Sand
Coarse	Loamy Sand
Coarse	Loamy Very Fine Sand
Coarse	Sand
Coarse	Very Fine Sand
Fine	Clay
Fine	Sandy Clay

Surface Texture Group	Surface Texture Class
Fine	Silty Clay
Medium	Clay Loam
Medium	Coarse Sandy Loam
Medium	Fine Sandy Loam
Medium	Loam
Medium	Sandy Clay Loam
Medium	Sandy Loam
Medium	Silt
Medium	Silt Loam
Medium	Silty Clay Loam
Medium	Very Fine Sandy Loam

3.6.6 44030 Business Rule - Plant Mix List - Plant Mix Association - Valid Values

	Rules		
	R1	R2	R3
Conditions			
Plant Mix is approved by State used for primary filtering	x		
Quantity of plant mix plants found in the available plant list			
75% or more	x	x	
Less than 75%			x
Filter Point			
Baseline (After Primary Before Secondary)	x		
After Secondary		x	x
Actions			
Include Plant Mix in Plant Mix List	x	x	x
Mark Plant Mix with Soft Elimination			x

3.6.7 44077 Business Rule - User - Role Association - Valid Values

Conditions	Rules				
	R1	R2	R3	R4	R5

Authenticated					
Yes		x	x	x	x
No	x				
eAuth Level					
Level 1		x			
Level 2			x		
eAuth Management					
Managed			x	x	x
Unmanaged		x			
Authorized Roles (zRoles)					
Data Steward - Author				x	
Data Steward - Approver					x
Actions					
Assign General Planner - Unauthenticated Role	x				
Assign General Planner - Authenticated Role		x			
Assign NRCS Planner Role			x		
Assign Data Steward - Author Role				x	
Assign Data Steward - Approver					x

3.6.8 43870 Business Rule - Soil Texture Group – Derivation

Surface Texture Group	Surface Texture Class
Coarse	Coarse Sand
Coarse	Fine Sand
Coarse	Loamy Coarse Sand
Coarse	Loamy Fine Sand
Coarse	Loamy Sand
Coarse	Loamy Very Fine Sand
Coarse	Sand

Surface Texture Group	Surface Texture Class
Coarse	Very Fine Sand
Fine	Clay
Fine	Sandy Clay
Fine	Silty Clay
Medium	Clay Loam
Medium	Coarse Sandy Loam
Medium	Fine Sandy Loam
Medium	Loam
Medium	Sandy Clay Loam
Medium	Sandy Loam
Medium	Silt
Medium	Silt Loam
Medium	Silty Clay Loam
Medium	Very Fine Sandy Loam

3.6.9 44420 Business Rule - Design Plant Type - Valid Values

Design Goal	Plant Type				
	Grass	Forb/Wildflower	Shrub	Tree	Legume
Permanent Herbaceous Seeding / Planting	x	x	x	x	x
Temporary Herbaceous Seeding / Planting	x	x			x
Riparian Planting			x	x	
Woody Area Planting			x	x	
Windbreak / Hedgerow Planting			x	x	
Sodding	x				

3.6.10 44421 Business Rule - Design Propagation Type - Valid Values

Design Goal	Propagation Type								
	Seed	Bare Root	Container	Sprig	Corms	Tuber	Bulbs	Cuttings	Sod
Permanent Herbaceous Seeding / Planting	x	x	x	x	x	x	x	x	
Temporary Herbaceous Seeding / Planting	x	x	x	x	x	x	x	x	
Riparian Planting		x	x						
Woody Area Planting		x	x						
Windbreak / Hedgerow Planting		x	x						
Sodding									x

4 Non-Functional Requirements

4.1.1 Overview

4.1.1.1 Key Points

- These non-functional requirements did not originate in the RRC Tool, they were entered directly in this document.
- See the Software Requirements section in regards to the development requirements for this application, such as the need for including the business SMEs early so that rules can be refined, the need for a pilot, etc.
- See the Interface Requirements section in regards to user interface specification and external system interface specifications being completed as part of system design.
- See the Compliance & Standards section to note the requirement for user interface approval by the Public Affairs Division.

4.1.1.2 Missing Requirement Detail

- None known

4.1.1.3 Items Requiring Attention from Business SMEs

- None known

4.2 Design Constraints

ID	Requirement	Business Priority	Planned Business Phase	Requirement Status
NFDC-001	The system design effort shall evaluate different design options in regards to the ease of modifying rules after the system has been deployed.	Should	1	Draft

4.3 Hardware Requirements

ID	Requirement	Business Priority	Planned Business Phase	Requirement Status
NFHW-001	The software shall be deployed on standard NRCS hardware in the NTIC HA environment.	Must	1	Draft

4.4 Software Requirements

ID	Requirement	Business Priority	Planned Business Phase	Requirement Status
NFSW-001	The software shall be designed and developed in-house using the standard SDLC process.	Must	1	Draft
NRSW-002	The software development process needs to be iterative and engage the business SMEs early in the process so that they can evaluate and refine the business rules as needed.	Must	1	Draft
NRSW-003	The software shall be first deployed as a pilot for a select group of NRCS users with the intent of refining the business rules as needed.	Must	1	Draft
NRSW-004	After piloting and incorporation of pilot recommendations the software shall be deployed for nationwide NRCS use as well as General Public use.	Must	1	Draft

4.5 Performance Requirements

ID	Requirement	Business Priority	Planned Business Phase	Requirement Status
NFPR-001	The system shall perform in accordance with the standard expected response times for NRCS systems.	Must	1	Draft

4.6 Reliability Requirements

ID	Requirement	Business Priority	Planned Business Phase	Requirement Status
NFRR-001	The standard NRCS hours of operation shall apply for both general public and NRCS use.	Must	1	Draft

4.7 Supportability Requirements

ID	Requirement	Business Priority	Planned Business Phase	Requirement Status
NFSR-001	The system shall provide a tech support role that enables technical assistance to NRCS users.	Should	1	Draft
NFSR-002	The system shall be supported by the Help Desk.	Must	1	Draft

4.8 User Documentation Requirements

ID	Requirement	Business Priority	Planned Business Phase	Requirement Status
NFUD-001	Online help shall be provided.	Should	1	Draft

4.9 Interface Requirements

ID	Requirement	Business Priority	Planned Business Phase	Requirement Status
NFIR-001	The system shall provide error messages to the user using appropriate text as defined in NRCS standards.	Must	1	Draft
NFIR-002	The external interface points of the system have been defined in the functional and data requirement sections of the document. The detailed interfaces for each of these points shall be defined during system design.	Must	1	Draft
NFIR-003	A wireframe of the user interface shall be created as part of the system design.	Must	1	Draft
NFIR-004	The wireframe process shall be started early, overlapping wrap-up of detailed business requirement specification, to accommodate the time it may take for approval of the public facing user interface.	Must	1	Draft

4.10 Security and Privacy Requirements

ID	Requirement	Business Priority	Planned Business Phase	Requirement Status
NFSP-001	This system shall use the standard system for Authentication, USDA Authentication, when authentication is required.	Must	1	Draft
NFSP-002	This system shall use the standard system for Authorization, NRCS zRoles, when roles & jurisdiction is needed within the system.	Must	1	Draft

4.11 Compliance and Standards Requirements

ID	Requirement	Business Priority	Planned Business Phase	Requirement Status
NFCS-001	The public facing solution must conform to Public Affairs Division policy for public facing applications.	Must	1	Draft
NRCS-002	The system shall require a new Authority to Operate.	Must	1	Draft

4.11.1 Section 508 Compliance

ID	Requirement	Business Priority	Planned Business Phase	Requirement Status
NFSS-001	The system shall support standard compliance with Section 508.	Must	1	Draft

5 Requirements Traceability Matrix

Even though high level business requirements exist for VegSpec a trace between these requirements and the HLBRs has not been completed.

Appendix A - Acronyms, Terms and Definitions

Acronyms and Terms	Definitions
IT	Information Technology
ITC	Information Technology Center
NRCS	Natural Resources Conservation Systems
OCIO	Office of the Chief Information Officer
PPQA	Product and Process Quality Assurance
PSO	Production Support Operations
SRS	System Requirements Specification
SME	Subject Matter Specialist
RRC	Rational Requirements Composer

Appendix B – References

Ref #	Title	Version #/Date	Publisher
1	NRCS Requirements Development and Management Plan	1.0	NRCS
2	NRCS Change Control Process	1.0	NRCS

Appendix C – Requirements Specification Approach

Artifact Types

This requirement specification was created through the use of several types of requirement artifacts.

Artifact Type	Definition & Usage Notes
Actor	An actor specifies a role played by a user or any other system that interacts with the subject.
Actor – Person	Person actors are used to define the users of the system. The specification of each person actor includes the allowed user types, such as Employee or General Public as well as any jurisdiction limitations on the records that they can access.
Actor – System	System actors are used to define the system being built as well as all of the external system with which it communicates. The specification of each system actor includes an indication of what organization owns the system as well as what its current status is.
Context Diagram	A high level view of the system being built showing interaction with both person and system actors.
Process Diagram	<p>The primary goals of the process diagrams are to:</p> <ul style="list-style-type: none"> • Show what the system does vs what the user does • Identify sequencing of actions such that required data is available at the right time for calculations <p>They are not precise depictions of how the user interface will work. They provide framework and rules within which the user interface must operate, but there are likely places where things could be rearranged for a better user experience without impacting the flow requirements.</p>
User Requirements	User requirements define what the user does. They are typically about selecting, entering, reviewing, approving, etc.
Functional Requirements	Functional requirements define what the system does. This includes things like making sure valid value are provided to the user for section purposes, doing calculations, etc.
Data Requirements	Data requirements are primarily definitions of the data items used within the system. These data items are classified as entities, associations or attributes. These are items about which the user cares or about which rules must be provided. They are not intended to reflect logical and/or physical data models.
Business Rules	These are the heart of the system. Defining the set of valid values either specifically or by source, defining the calculations, etc.

Artifact Linking

Artifacts are linked together to tell the full story of the requirements. In this specification there is just one kind of link, a basic link to / link from. The links used within this specification and their purpose are defined in the following table.

Link	Definition & Usage Notes
From Person Actor to Person Actor	To show hierarchical relationships between the actors.
From System Actor to System Actor	To show top level system relationship to tools within the system. To show dependencies between systems.
From Process Diagram (subprocess) to Process Diagram	To show process breakdown into more detail processes.
From Process Diagram (task) to User Requirement	To show the user requirement(s) that supports the task.
From Process Diagram (task) to Functional Requirement	To show the functional requirement(s) that supports the task.
From User Requirement to Person Actor	To show who is authorized to perform the task.
From Functional Requirement to Person Actor	To show who is authorized to perform the task. Some system tasks only execute for certain users, so even though system tasks seem to be behind the scenes they still need designation of authorization.
From User Requirement to Data Requirement	To show what data item (attribute or entity) is being acted upon.
From Functional Requirement to Business Rule	To show what rule is being enforced by the system for the given task. This may occur with or without a business rule link.
From Functional Requirement to Data Requirement	To show what data item (attribute or entity) is being acted upon. This may occur with or without a data requirement link.
From Data Requirement (Entity) to Data Requirement (Association)	To show what associations the given entity is part of.
From Data Requirement (Entity) to Data Requirement (Attribute)	To show what attributes are associated with the entity.
From Data Requirement (Entity) to Business Rules	To show what business rules apply to the given entity.
From Data Requirement (Association) to Data Requirement (Attribute)	To show what attributes are associated with the given association.
From Data Requirement (Association) to Business Rules	To show what business rules apply to the given association.
From Data Requirement (Attribute) to Data Requirement (Association)	To show what associations are the given attribute is a part of.
From Data Requirement (Attribute) to Business Rules	To show what business rules apply to the given attribute.

Link	Definition & Usage Notes
From Use Case Diagram (Context) to Actor	To show how the actors interact with the given system.

Appendix D – Document Conventions

Requirement Table Contents

Column	Purpose & Content
ID	Contains a unique identifier for the requirement. These requirements originated in the Rational Requirements Composer tool and the ID is the artifacts id within the tool.
Artifact Type	Identifies the given type of artifact being defined.
Name	Identifies a short name for the requirement.
Requirement / Definition / Rule	Identifies the requirement itself. When the artifact type is a diagram the diagram will be show following the table. The table cell will include a reference such as ‘See Diagram’. Some Business Rule artifacts use a decision table to define the rule. Decision tables are provided in a section following the business rules. The table cell will include a reference such as ‘See Decision Table’. The header for each decision table is the requirement ID, Type and Name. Typically when defining the attribute of an external system, the valid values were included as the part of the definition. When defining attributes of the given system valid values are typically expressed via Valid Value rules.
Link To	<p>Contains a list of the artifacts that the given artifact links to. The number and name of the linked to artifact are provide. Ideally, there would also be an artifact type designation and a live link to the given artifact. However, since this data was exported from the RRC tool this was not possible.</p> <p><i>Link To items will typically need to be followed to tie requirements together. To do so, just search on the ID of the link to item and find a reference to it in an ID column.</i></p>
Business Priority	An indication of the priority of the requirement from the business. Possible values are: Must, Should, Could, Won’t.
Planned Business Phase	The general phase for implementation from the business perspective. The actual implementation phase may define more refinements of delivery within a given business phase.
Requirement Status	The status of the requirement. Possible values are: Draft, In-Progress (review), Pending Review, Approved, Rejected, and Deprecated.
Tags	Within RRC tags are used facilitate searching within various topic areas. They are of great benefit within the tool.

General Organization

Section	Purpose & Content
Overview	Used in each Requirement sub section as needed.
Overview – Key Points	To point out some key items about the given section.
Overview –Missing Requirement Detail	FY 15 ended before the detailed requirements could be completed. This section identifies known areas where the requirements are not complete.
Overview – Items Requiring Attention from Business SMEs	FY 15 ended before the business SMEs had time to review the requirements that were completed. This section draws attention to particular areas where business SMEs might want to focus.
Context Diagram	Only applies to the top level section. Provides a top level view of dependencies between the given system and external system as well as person actors.
System Actors	Only applies to the top level section. Provides definitions of the systems with which the given system interacts. These are dependencies.
Person Actors	Only applies to the top level section. Provide requirements concerning the people that will interact with the system.
Process Diagram	Applies to the Functional Requirements section. Provides a view of the process being specified in the given section. There may be multiple diagrams.
Requirements	Applies to the Functional Requirements section. Provides the set of specific User and Functional (system) requirements for the given section.
Entity Data Requirements Association Data Requirements Attribute Data Requirements	Applies to the Data Requirements section. Provides the set of definitions for each of the given kinds of data requirements.
Business Rules	Applies to the Data Requirements section. Provides the set of business rules for each subsection.
Business Rules – Decision Tables	Applies to the Data Requirements sections. Provides the decision tables referenced by business rules.