Status of the National Soil Geographic Database (NSGD)

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National Soil Geographic Database

- Transactional subsystem
- National database
- Logically integrated with NASIS
  - Shared concepts
  - Logical relationships and linkages
- Quasi physically integrated with NASIS
  - ‘Access’ to NASIS data

Analysis Team

Cleveland Watts	MO Leader/SSS, MO5/Kansas
Darrell Kautz	Nat. Resource Specialist/Business Analyst, NSSC GRU
Jennifer Sweet	Soil Scientist, Soil Geodatabases Team, NCGC
Jim Fortner	Soil Scientist, NSSC
Jon Gerken	Soil Scientist/Assistant Program Manager, NHQ
Jon Wiedenfeld	Soil Scientist/SSO Leader, Texas
Mike Hansen	Assistant SSS, Montana/National SSURGO Coordinator
Sharon Waltman	Soil Scientist/Spatial Data Specialist, NSSC GRU
Whityn Owen	Cartographer, MO1/Oregon

Objectives

- Document detailed requirements
  - What we want the system to do
  - Minimum capabilities for initial release
  - Future capabilities for future releases
- 'Bridge' to ITC
  - System analysis
  - Design and development

Business Processes

- Plan and manage projects
- Do projects
- Publish new versions of SSA data
  - Including progressive publication
- Track progress

Plan and Manage Projects

- Analyze existing data and resource conditions
- Define and setup projects

Plan and Manage Projects

- Analysis
  - Capability to export transactional spatial data for area of interest
    - One-way street: data out
  - Analysis environment
    - Local computer

Local Computer

- Data
  - Corresponding extent in NASIS local database
  - Local ancillary data and imagery
- Analysis tools
  - ArcMap, Access, SQL Management Studio, special purpose NASIS export reports, etc.
  - GIS and DSM models and technologies

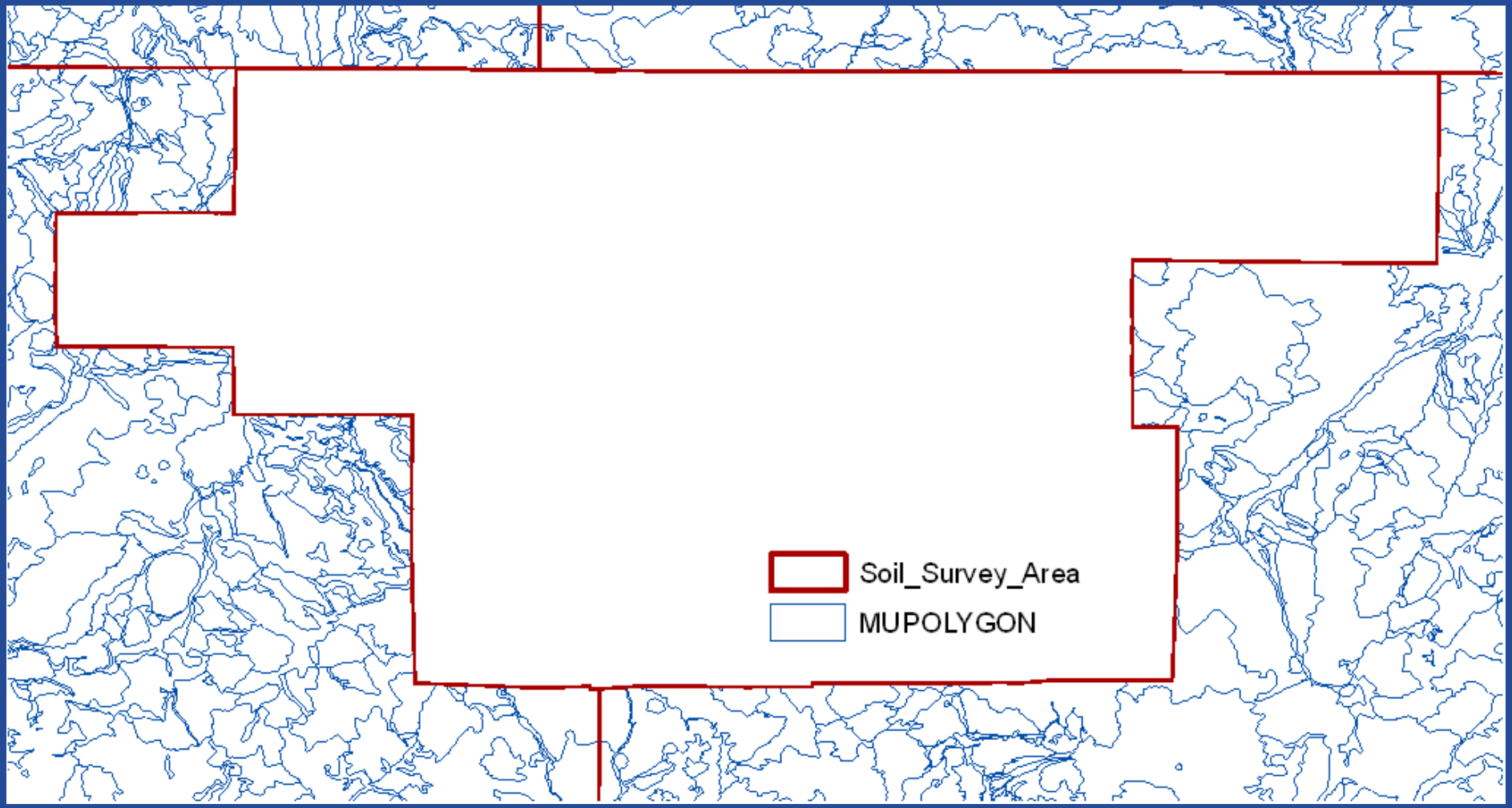
Plan and Manage Projects

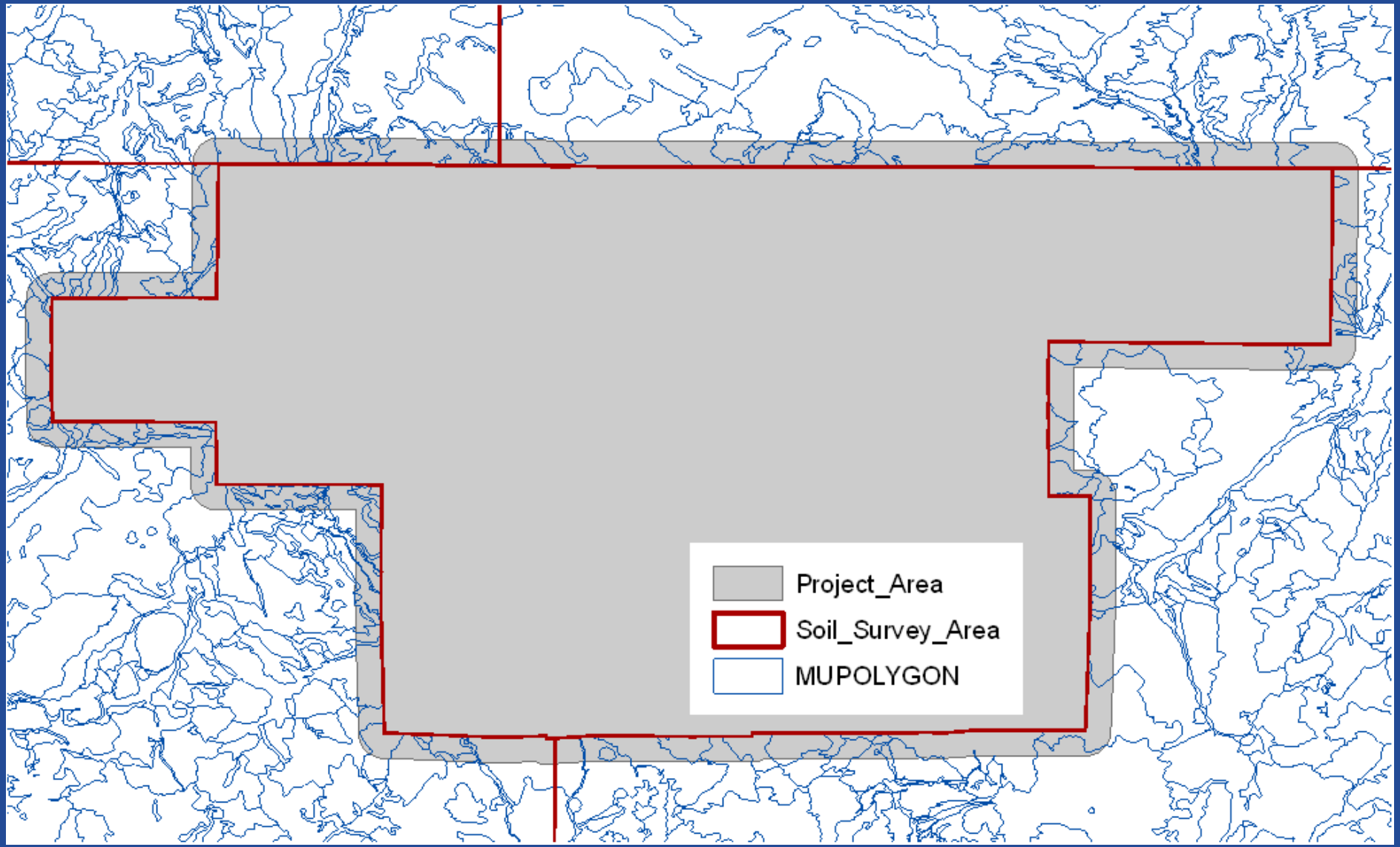
- Define and setup projects
  - Capability to digitize and store Project Areas
    - Where – location and extent of project
    - Linked to project record in NASIS
  - Capability to digitize and store Work Areas within a Project Area
    - Portion of Project Area
    - Where by planning period and/or by staff

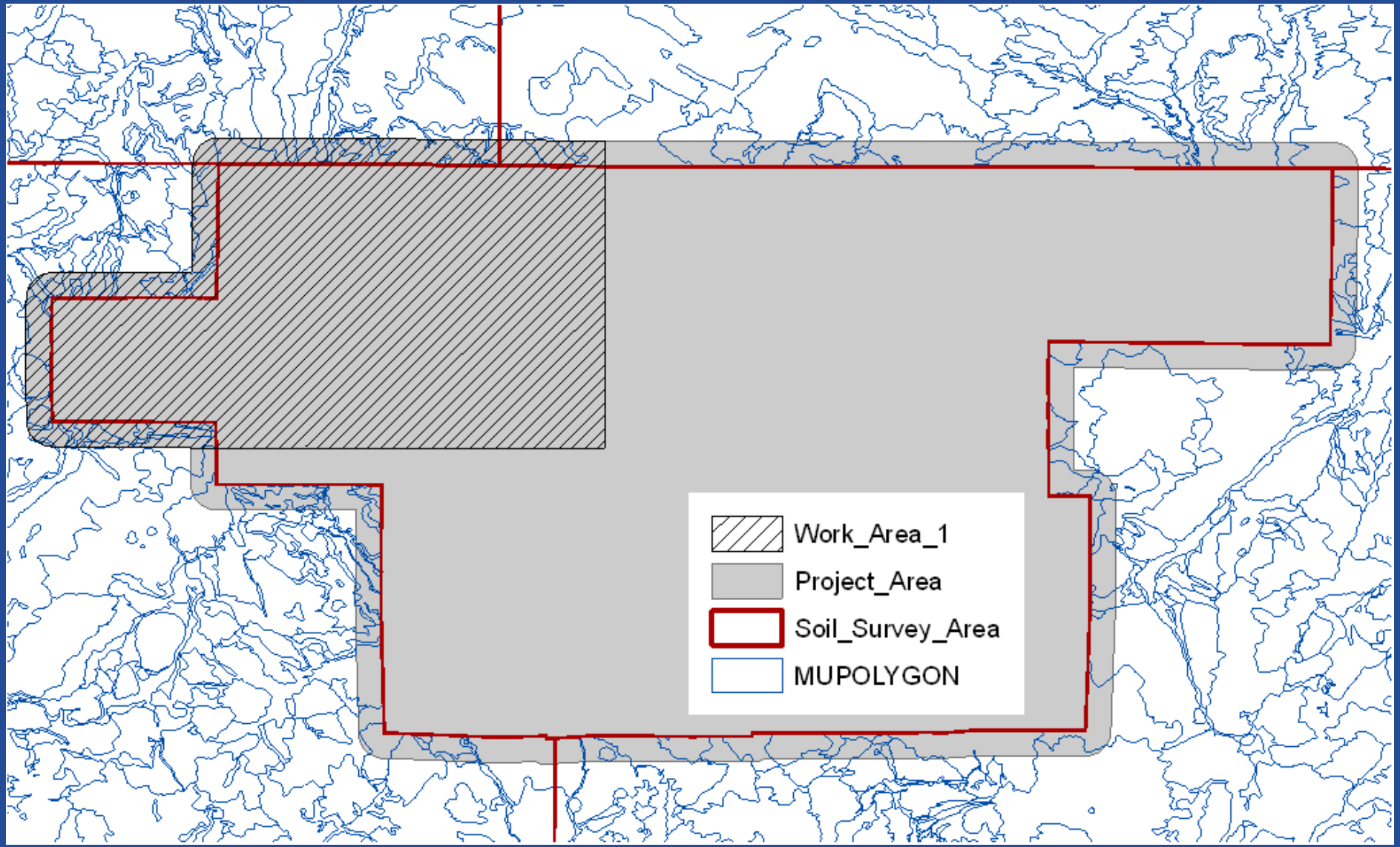
Work Areas

- Mechanism/structure to manage edit authority to the fabric of soil map unit features
  - 'NASIS Group' with authority to check out and edit features
  - No spatial edits required → no group assigned to Work Area

Initial Soil Survey Project




Project_Area
Soil_Survey_Area
MUPOLYGON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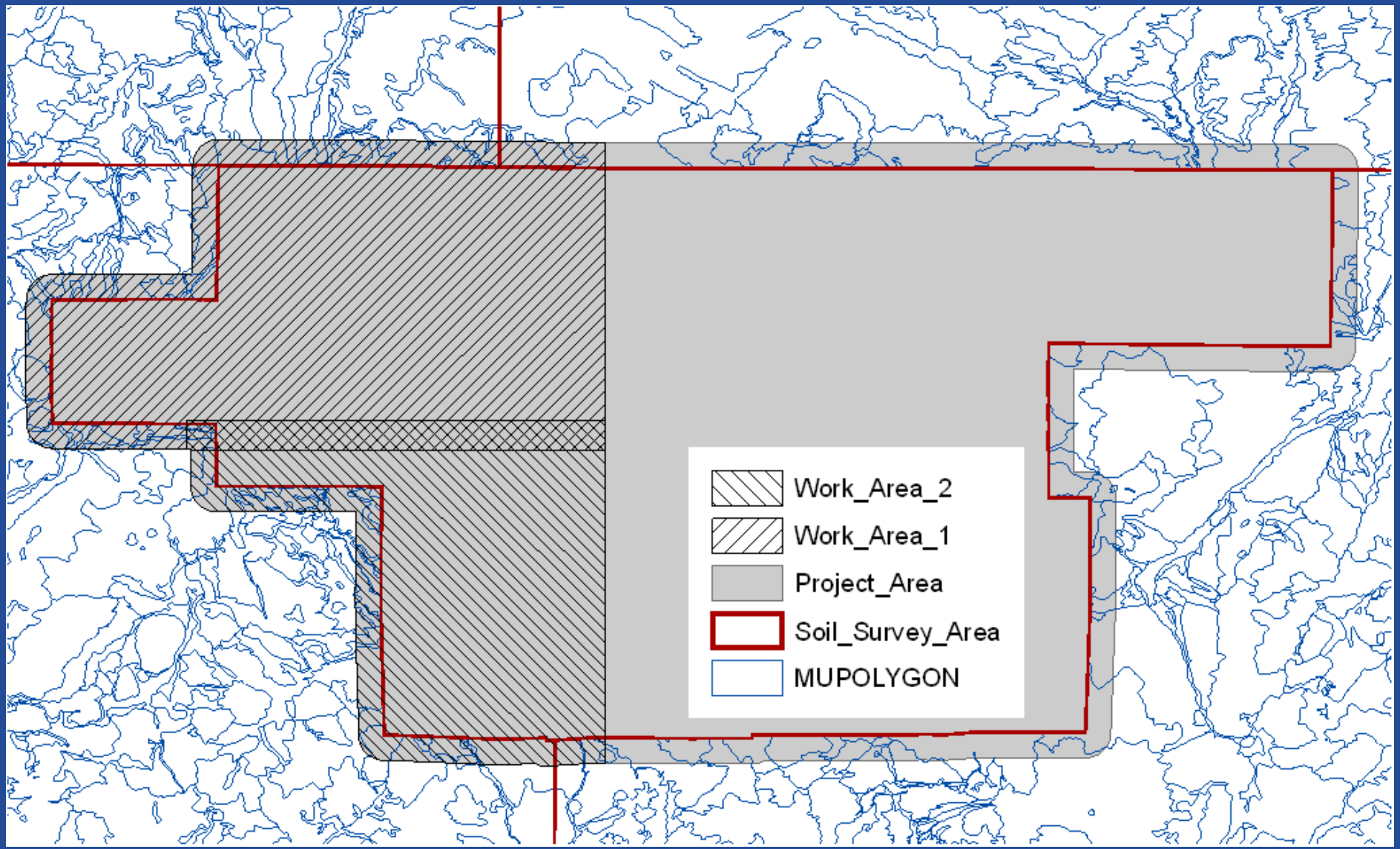
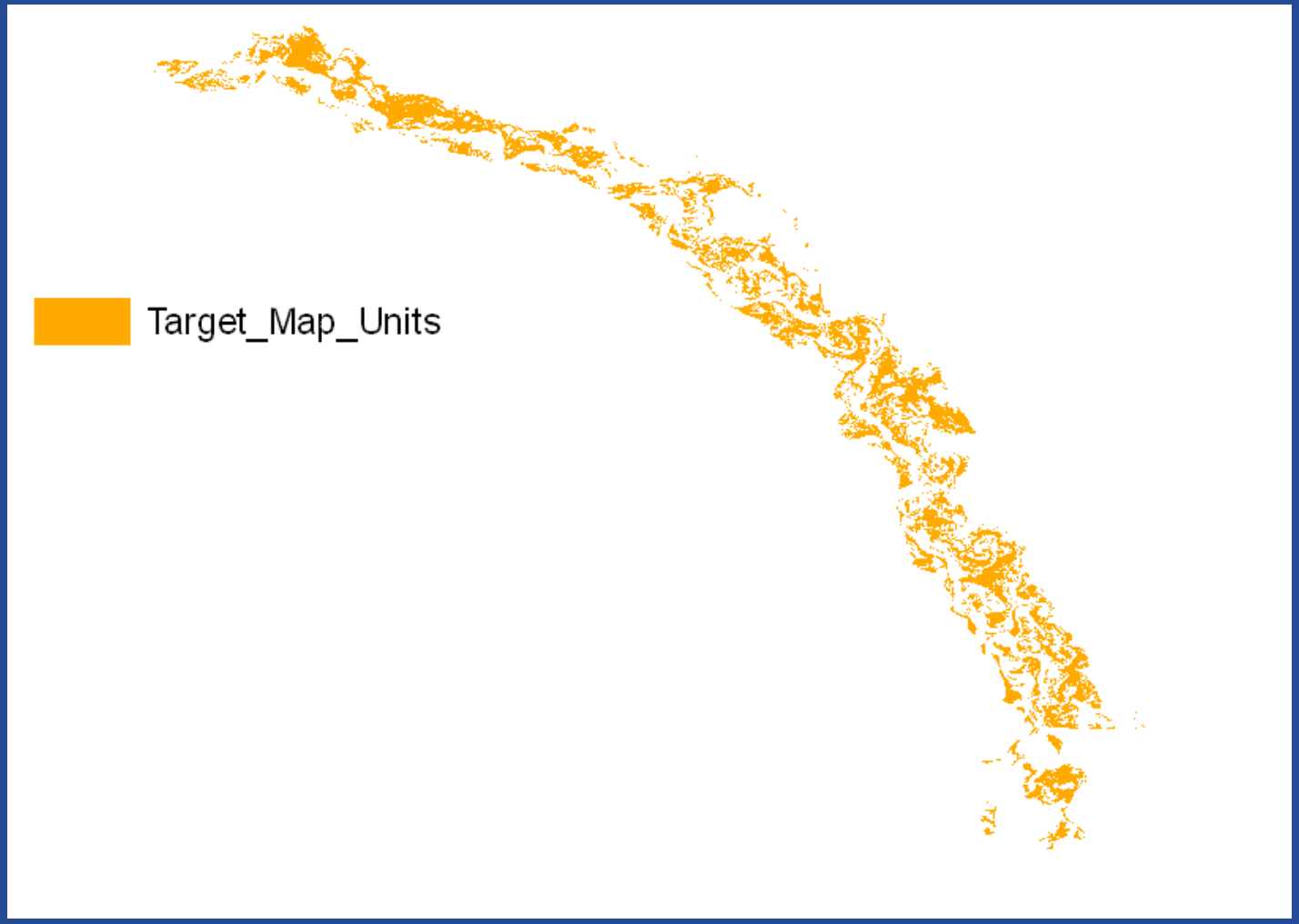
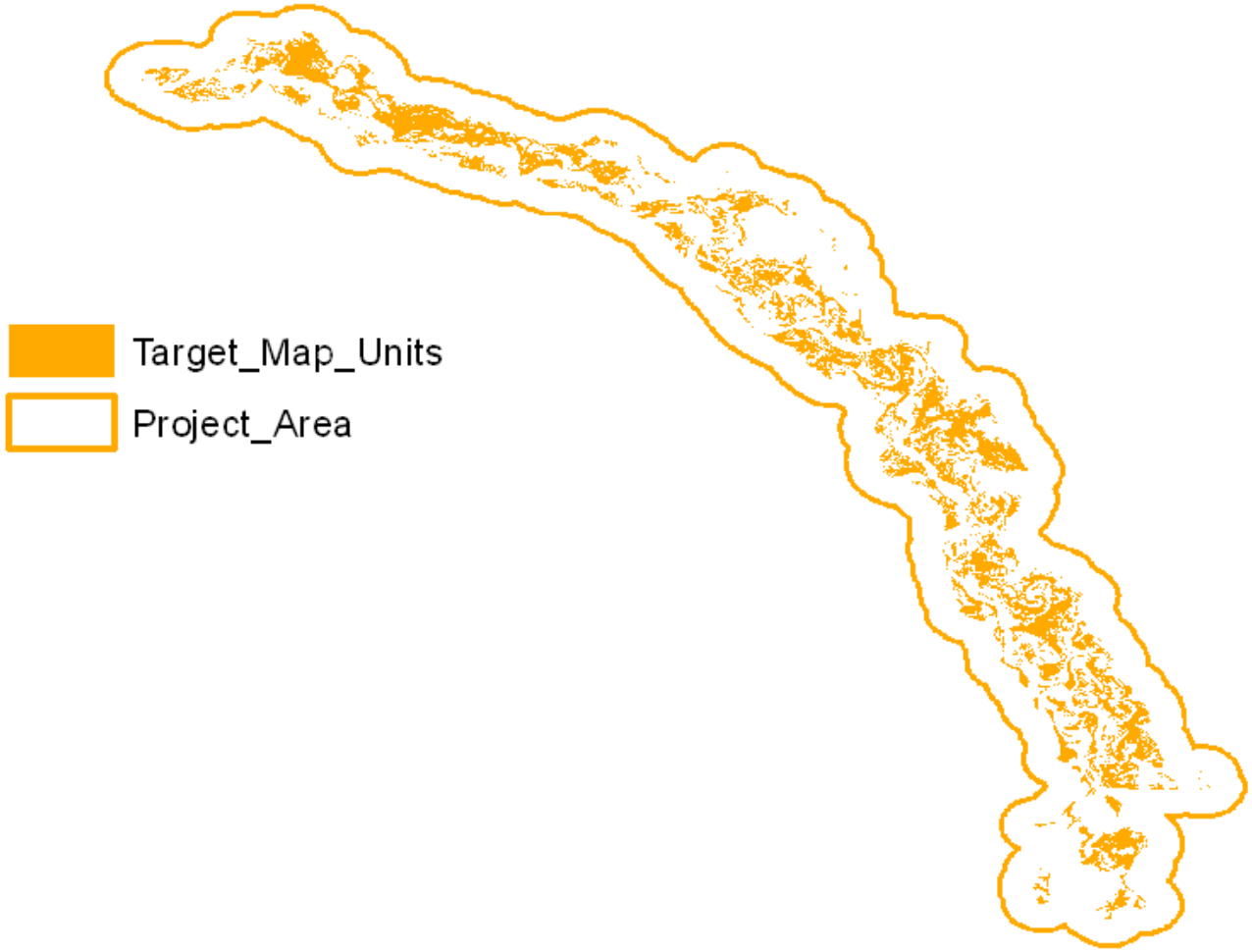
Project_Area
Soil_Survey_Area
MUPOLYGON


Work_Area_2
Work_Area_1
Project_Area
Soil_Survey_Area
MUPOLYGON

Update Soil Survey Project

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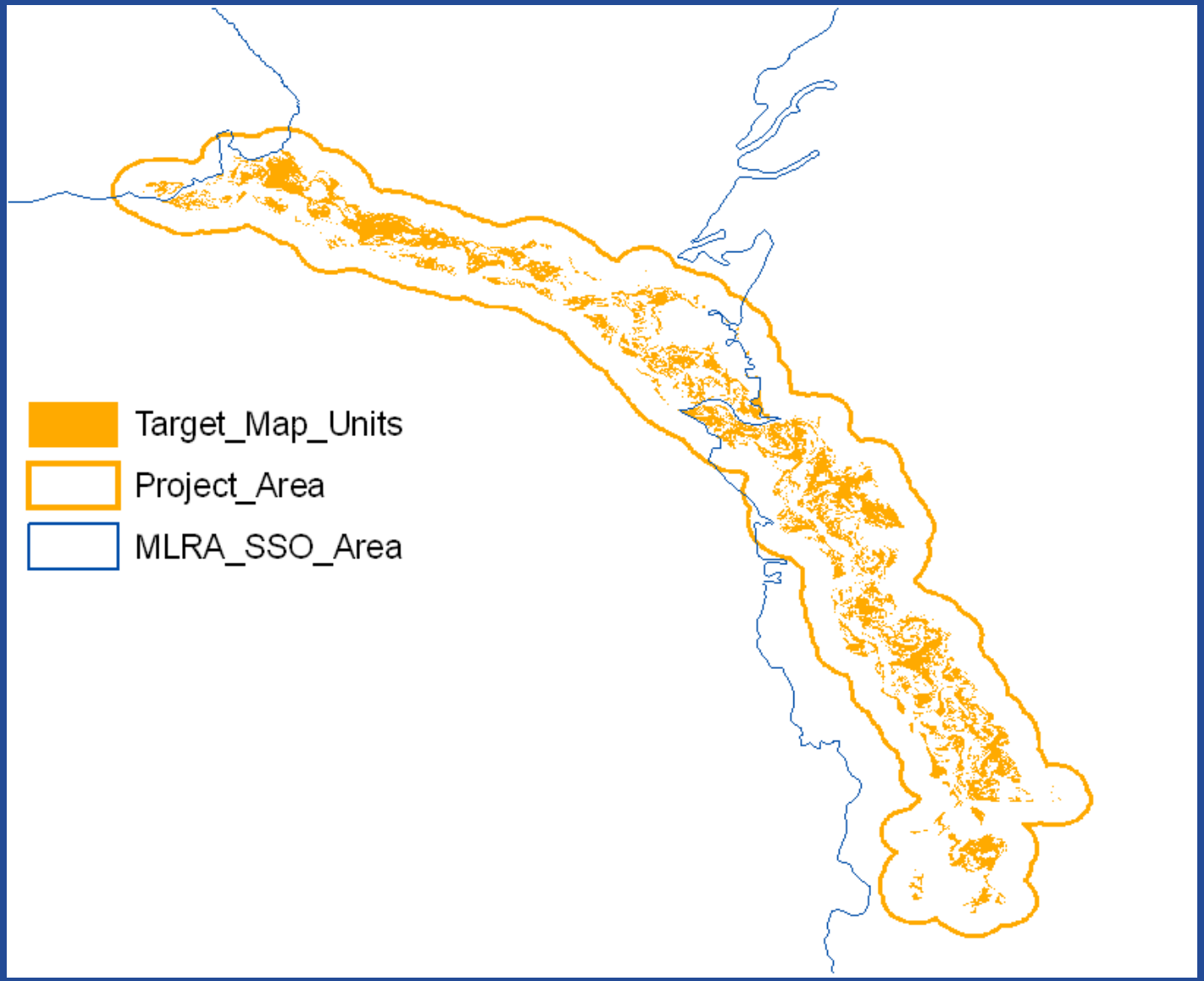
Project_Area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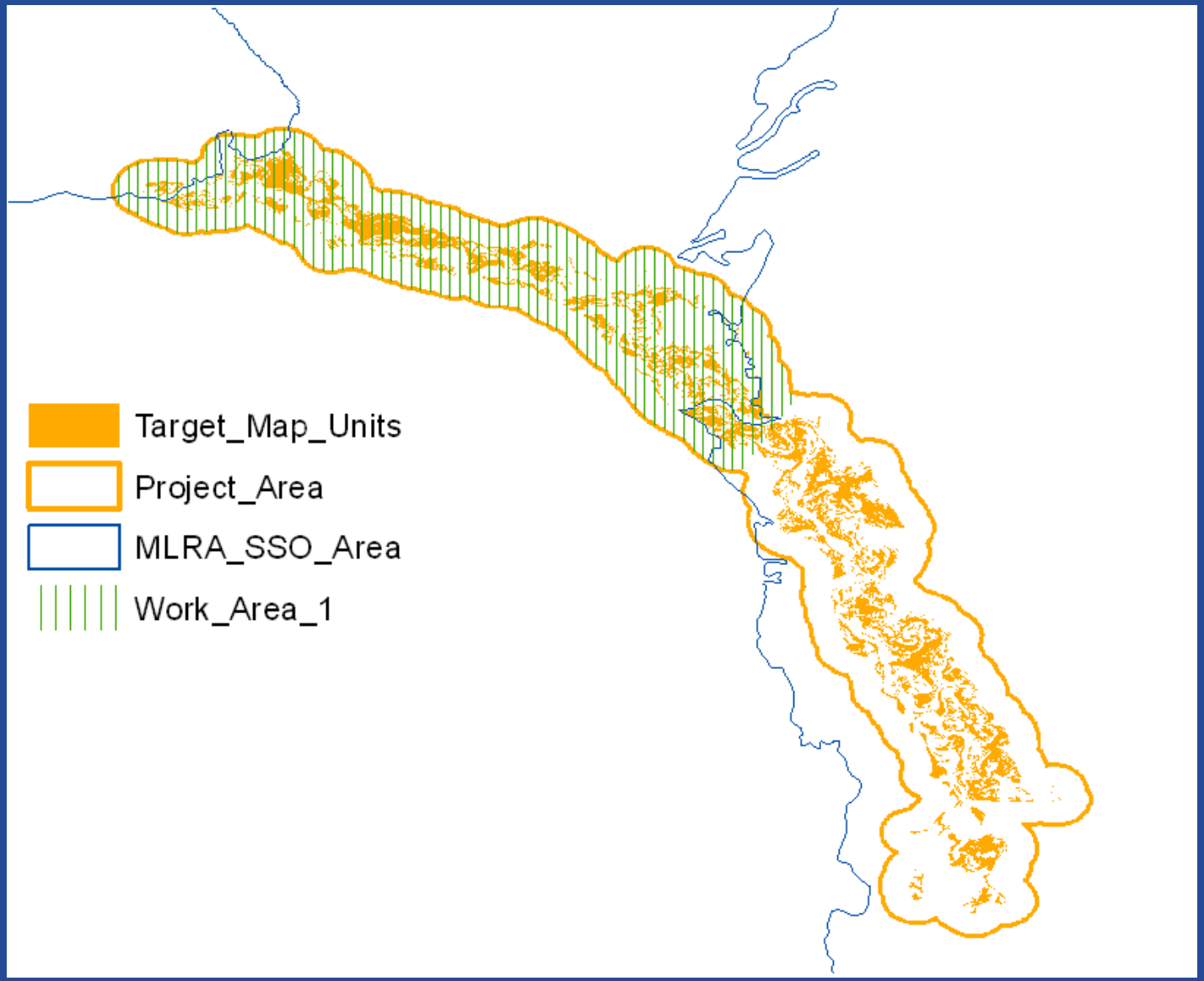
Project_Area
MLRA_SSO_Area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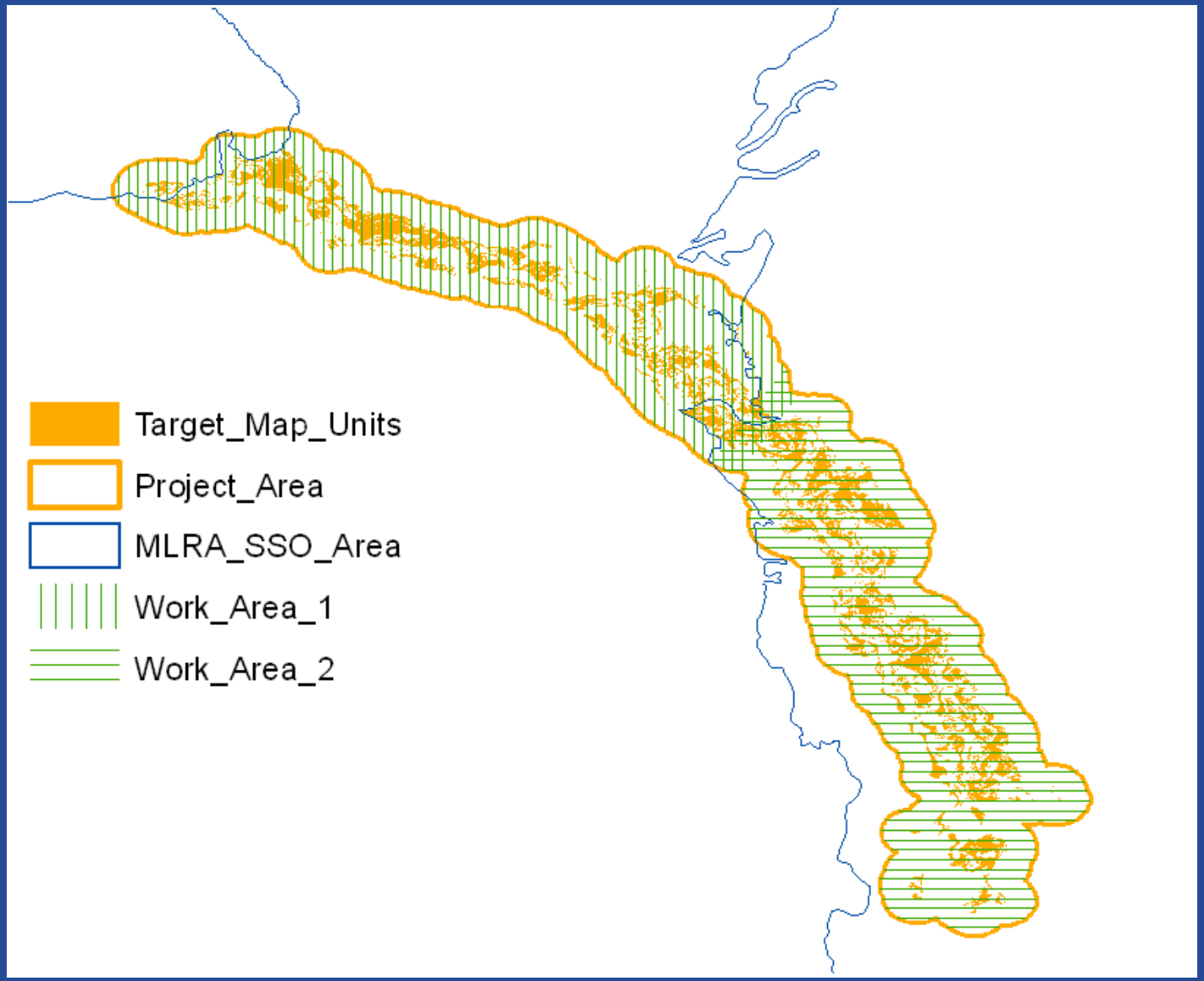
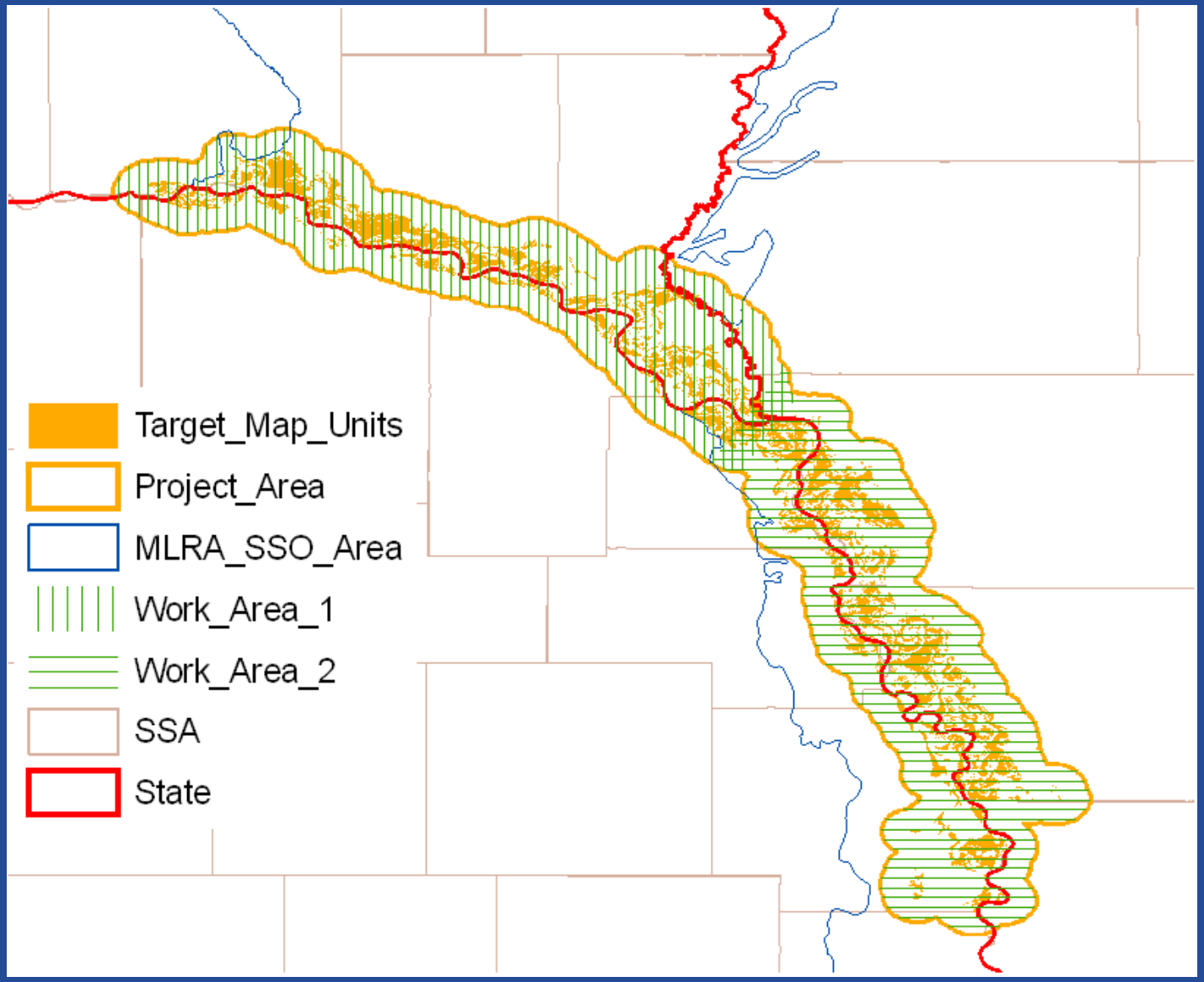
MLRA_SSO_Area
Work_Area_1


Target_Map_Units
Project_Area
MLRA_SSO_Area
Work_Area_1
Work_Area_2


Target_Map_Units
Project_Area
MLRA_SSO_Area
Work_Area_1
Work_Area_2
SSA
State

Project Area and Work Areas

- Track progress spatially
- Requirement of Soil Survey Schedule Analysis Team
  - "...designate on a map where activities … occur. It is preferred that this be a national coverage so that progress can be summarized more efficiently."

STATUS of Map Unit Features

- Track progress spatially
- Map unit feature level attribute
  - Track progress throughout the project and publication workflow
  - Trigger QC, QA, and publication processes
  - Identify publication-ready features

STATUS – Initial State

- UNMAP – not mapped
- NODIG – mapped but no digital spatial data
  - Current SDM 'tabular-only'
- PUB – published mapping
  - Current SDM 'tabular and spatial'
- DRAFT – current transactional data under development in SSOs and POs

STATUS – Initial Soil Survey

→ UNMAP

↳ PREMAP

↳ DRAFT (*linked to NASIS map unit*)

↳ QC_READY (*QC_REJECT*)

↳ QA_READY (*QA_REJECT*)

↳ PUB_READY

STATUS – Update Soil Survey

- PUB
  - DRAFT
    - QC_READY (*QC_REJECT*)
      - QA_READY (*QA_REJECT*)
        - PUB_READY

Track Progress Spatially

- Summarize progress by STATUS, Work Area, and Project Area
  - By planning period and/or staff
- Summarize progress by STATUS and SSA, State, MO, or other area types

Do Projects

- Create/update/replace spatial data
- QC/QA
- Communicate

Create/Edit/Replace Spatial Data

- Authority ?
  - 'NASIS Group' assigned to the Work Area
- Available ?
  - No overlapping check outs allowed
- Check Out
  - Two-way street: out, edit, check in

Create/Edit/Replace Spatial Data

- Edit environment
  - ArcMap on local computer

Create/Edit/Replace Spatial Data

- Track correlation decisions spatially
  - Progressive correlation history
  - Compliment/integrate with existing NASIS correlation tracking

QC/QA

- Logical quality of the spatial data
  - Soil science
- Analysis
  - Export capability
  - Analysis environment

Communicate

- Capability to record digital survey flags
  - Mapped points with categorized notes
    - Not point data
  - Communication
    - Within/between SSOs or POs
    - Between different levels of responsibility

TSS and CTA

- Capability to record digital survey flags
  - Mapping errors or issues observed during field visits
    - Digital solution to the “official field office copy” of the soil survey manuscript
  - Communication between users and makers

Publish New Version of SSA Data

- QC/QA
- Publication processing

QC/QA

- Physical quality of the spatial data
  - Geographic science
  - Standards vs. guidelines
- Errors and problems fixed in the transactional database

Publication Processing

- Current DU processes and tools
- Complexities due to not all features within a SSA being at the same STATUS
  - Progressive post of initial SSA
  - Multiple update projects within a SSA

STATUS – Post-publication

→ PUB_READY

↳ PUB

- Always know which transactional features represent the current published features

Timeline

- FY10 Q1: start Requirements phase of Software Development Lifecycle (SDLC)
- FY10 Q3-4: engage ITC system analysts and architects
  - Continuation of Requirements phase
  - Define scope of initial release
- FY11 Q1: begin Design phase of SDLC