FROM LANDSCAPE STRATEGY TO MANAGEMENT UNIT DEVELOPMENT

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COLORADO FOREST
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Document Development Statement: CFRI has completed numerous Risk Assessment Decision Support (RADS) projects across Colorado. RADS often produces landscape-scale strategies that identify vegetation treatment types and locations to reduce wildfire risk. Translating these landscape strategies into on-the-ground action can be challenging for managers, particularly when narrowing priority treatment units to implementable management units or deciding where and why to work outside of priority treatment units. This document is intended for technical RADS users and provides hypothetical examples from Gunnison County, which recently completed the RADS process as part of its Community Wildfire Protection Plan update. The approaches described here can be applied to landscapes with a completed risk assessment, and ideally a landscape strategy, to develop actionable management units.

Allison Rhea, Andrew Slack, and Ch'aksa Huayuaca developed the initial concept for this document. Allison Rhea, Andrew Slack, Ch'aska Huayhuaca, Tyler Beeton, Jackie Edinger, and Jarod Dunn wrote and edited the document. Jackie Edinger and Allison Rhea created the maps that are featured throughout the document.

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Introduction

The Colorado Forest Restoration Institute (CFRI) developed the collaborative Risk Assessment and Decision Support (RADS) process to help communities identify valued resources, assess wildfire risk, and prioritize treatments across a landscape (Dunn and Wolk, 2023; Rhea et al., 2024). In this context, *treatments* refer to vegetation management actions—such as thinning, prescribed fire, mastication, or patch cuts—designed to reduce surface and/or canopy fuels and mitigate wildfire impacts. RADS is typically used as a mid-scale planning tool, bridging large-scale assessments like the Colorado State Forest Service's Forest Action Plan (CSFS, 2020) and stand-scale tools such as the Forest Vegetation Simulator (U.S. Forest Service, n.d.). RADS identifies priority treatment locations and types based on feasibility[1], cost[2], and risk reduction[3]. In addition, the underlying spatial data layers reveal which values drive risk, which treatments are feasible, and how activities can be tailored to local objectives at the management unit scale. This brief outlines how partners can use RADS outputs to move between priority treatment units (hundreds-thousands of acres) and actionable management units (tens-hundreds of acres) using hypothetical examples from Gunnison County. It is intended for partners who have completed, or are familiar with, the RADS process and its outputs.

We envision two primary ways RADS outputs can support planning and implementation of strategic on-the-ground projects. The first approach **narrows down from a landscape-scale treatment plan to management units** (Figure 1). This approach explicitly links project work to a broader landscape strategy, which can be useful for securing funding and communicating outcomes at scale. It helps ensure that vegetation management occurs in areas reflecting locally vetted values and maximizes risk reduction relative to cost. This approach may be particularly helpful for selecting projects when shared funding is tied to a treatment plan. However, working in priority treatment units may require building new relationships with landowners or working in less engaged communities. The general process for narrowing down from a landscape treatment plan to management units is outlined in ***Use Case I: Big to Small*** and includes the following steps:

1. Review existing data and prioritization maps
2. Identify a priority treatment unit
3. Engage local partners and community leaders active in that area
4. Evaluate treatment options
5. Delineate a project area targeting high risk or high return-on-investment
6. Determine the values driving the risk
7. Organize value-specific management units
8. Refine management units by land ownership
9. Finalize management unit delineation
10. Gather maps for public outreach and engagement

Alternatively, partners can **identify overlap between planned projects and priority treatment units defined in the landscape-scale treatment plan**. Aligning the two can help refine project boundaries, communicate co-benefits of treatments, and strengthen their connection to a broader landscape strategy. Some projects may have been developed before the RADS process was completed, or may be driven by funding requirements, mandates, or objectives not fully captured in RADS. Still, RADS outputs can support communication of the need for treatments and demonstrate how proposed work fits into larger strategic goals. The general process for identifying overlap between planned projects and priority treatment units is outlined in ***Use Case II: Small to Big*** and includes the following steps:

1. Map short-term planned projects that are likely to be implemented within the next 1-2 years.
2. Overlay planned projects with landscape-scale treatment plan.
3. Identify areas where the planned projects overlap with priority treatment units.
4. Compare stated project objectives with values at risk identified in RADS to assess alignment.
5. Identify the landowner and implementing agency to verify permissions, permitting requirements, and best management practices.
6. Gather maps for public outreach and engagement.

[1] Feasibility captures hard constraints, like wilderness and roadless areas or certain forest types where a vegetation management action may not be appropriate or possible to implement. Feasibility assumptions are detailed in risk assessment technical reports.

[2] Variable vegetation management costs account for costs of different management actions (e.g., mechanical thinning versus prescribed fire) and operational constraints, like steep slopes or poor access, that make vegetation management more expensive. Cost assumptions are detailed in risk assessment technical reports.

[3] Risk reduction represents the potential reduction in wildfire risk to highly valued resources and assets (HVRAs) based on proposed vegetation management actions. Risk reduction estimates are restricted to only feasible areas.

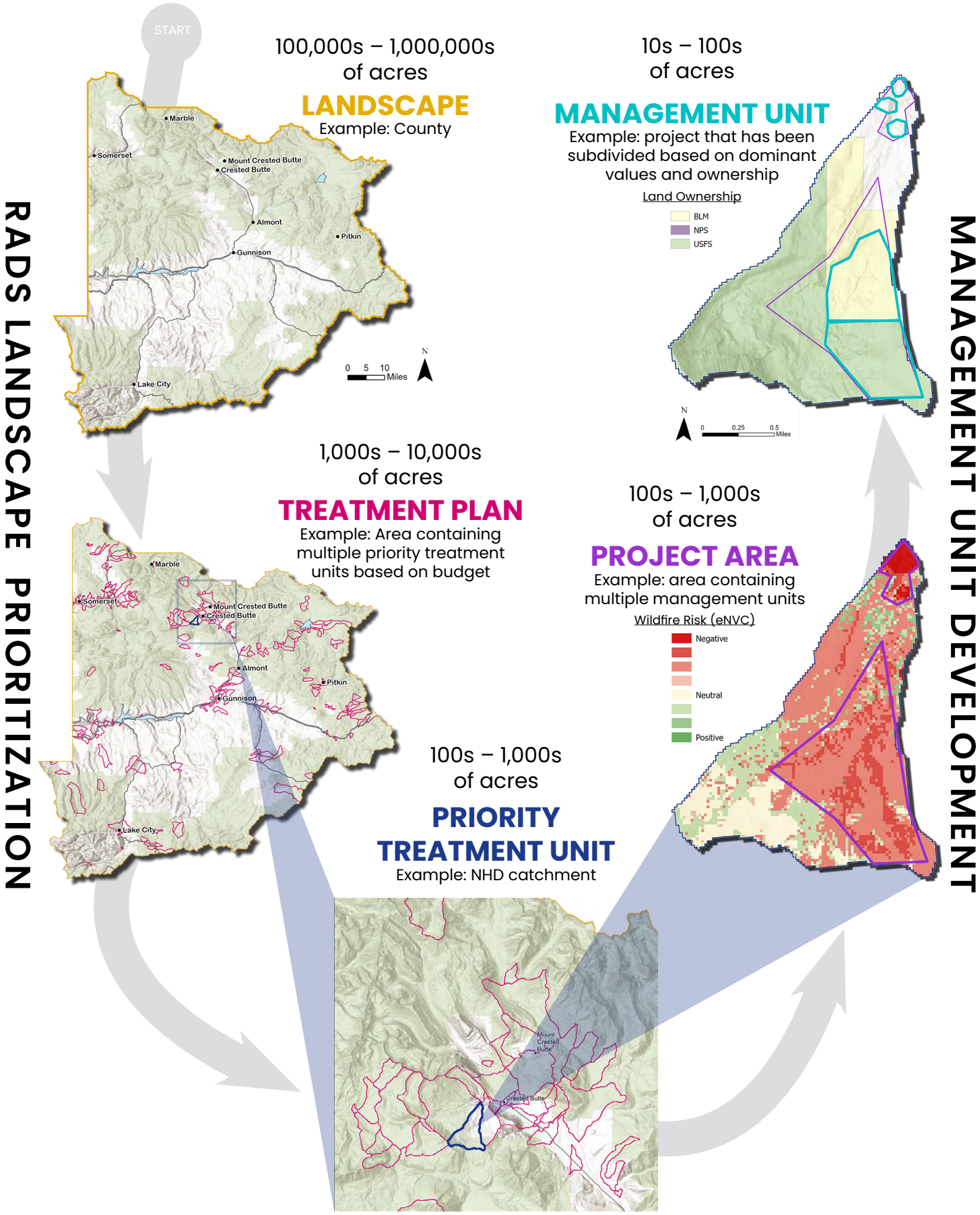

Figure 1: Conceptual figure demonstrating a framework for narrowing down RADS landscape prioritizations to value- and owner-specific management units. NHD is the National Hydrography Dataset from the U.S. Geological Survey. Expected net value change (eNVC) is often referred to as wildfire risk and represents the likely impacts of fire on highly valued resources and assets.

While the two use cases outlined above focus on strategic investment within designated priority treatment units, there will be cases where partners may want or need to work outside these boundaries. **Projects that fall outside priority treatment units** may provide important landscape and community benefits, but require implementors to weigh tradeoffs and justify the investment. In some cases, working adjacent to priority treatment units can support coordinated, cross-boundary management and advance broader landscape objectives. These exceptions include using POD lines to prevent undesirable fire spread into priority treatment units (***Exception A***), treating high-risk areas adjacent to priority treatment units to improve landscape continuity (***Exception B***), or building strong community momentum for prescribed fire (***Exception C***). Such anchor or connective projects can help link efforts across boundaries, contributing to more cohesive and resilient landscapes over time.

After delineating management units using any of the methods described in the two RADS use cases or three exceptions, refer to ***Mapping Tools to Translate Plans into Action*** for examples of maps that may support public outreach, grant applications, and prescription development. It is important to recognize that the RADS framework is just one of several planning approaches that can inform strategic decision-making. Ideally, RADS outputs should be integrated with other tools - such as potential operational delineations (PODS)[4], local knowledge, and operational constraints—to align treatments with both community values and landscape-scale fire resilience goals.

Check out the CFRI storymap version of this report.

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U.S. Forest Service. (n.d.). *Forest Vegetation Simulator (FVS)*. U.S. Department of Agriculture, Forest Service, Forest Management Service Center. https://www.fs.usda.gov/fvs/

[4] PODs are a spatial fire planning framework that leverages local expertise and risk-based analytics to pre-identify natural and constructed containment features (e.g., roads, rivers, ridges) throughout the landscape. PODs help inform incident response and fuel treatment planning. For more information, check out this StoryMap.

Use Case I: Big to small

In this hypothetical use case, we leverage Gunnison County Risk Assessment Decision Support (RADS) data (Edinger et al., 2025) to illustrate a collaborative process for narrowing down landscape-scale priorities into actionable management units for future vegetation management. Figures are numbered sequentially to align with each step in the process and figure captions provide key information for interpretation.

1. **Review existing data and prioritization maps.** Use the risk assessment technical report to review key assumptions and access spatial data on highly valued resources and assets (HVRAs), net value change (NVC), and treatment feasibility and cost, and treatment priorities.

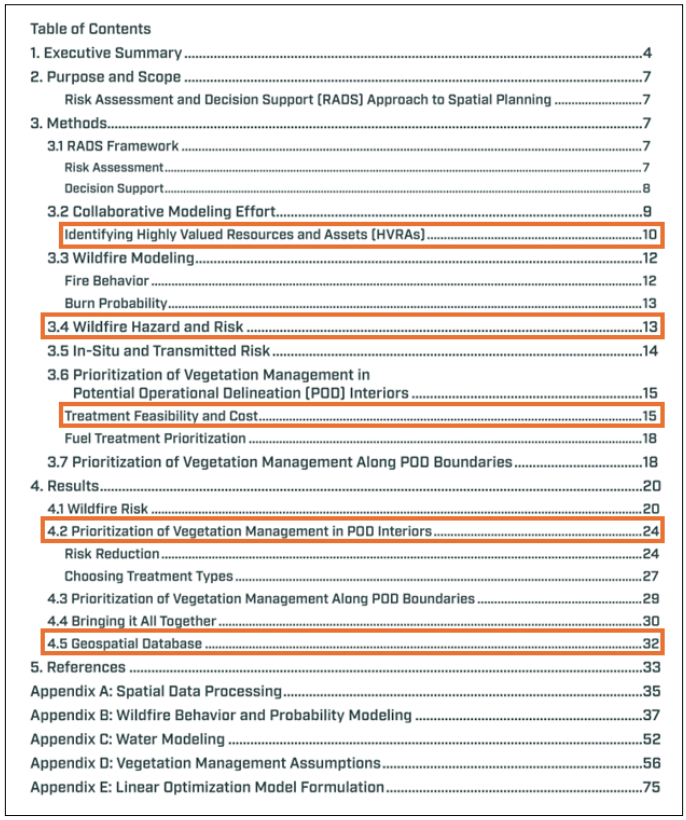

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Figure 1: Example table of contents from a RADS technical report. Relevant information on values, risk, and treatment constraints is typically found in the methods section with the key sub-sections outlined in orange. The Geospatial Database section includes a link to the online map and spatial data. All CFRI technical reports can be accessed through CFRI's publications page.

2. **Identify a priority treatment unit.** This is often a National Hydrography Dataset (NHD) catchment identified in your landscape's treatment priority map.

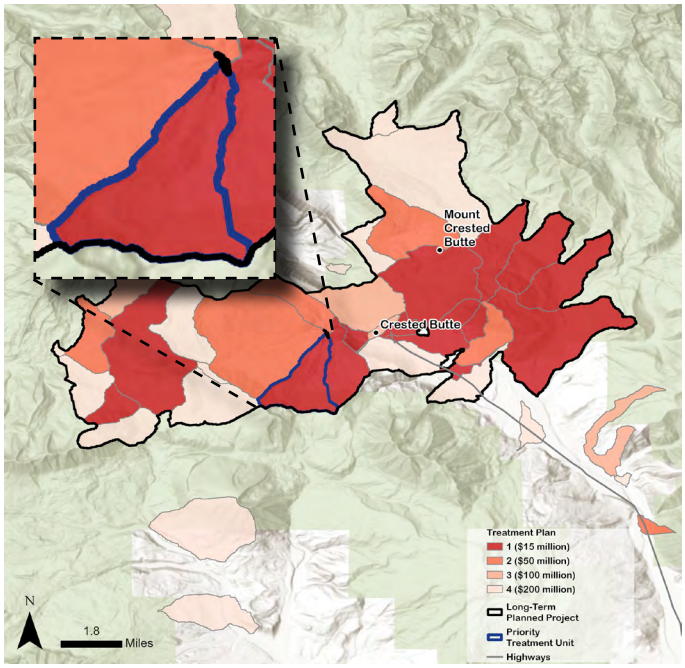


Figure 2: The Gunnison County fuel treatment prioritization highlights several priority treatment units (red to pink) near Crested Butte. The Community Wildfire Protection Plan, which was updated alongside the risk assessment, identified all these treatment units as planned projects for implementation in the next 6-10 years (black outline). That 38,000-acre planned project must be divided into smaller management units based on values at risk, land ownership, and local ecology. This use case focuses on Wildcat Creek (dark blue outline), one of the highest-risk treatment units and a top priority for vegetation management.

3. **Engage local partners and community leaders active in that area.** This may include collaborative conveners, land managers, and implementors who will carry out the treatments as well as community "spark plugs" (e.g., Firewise ambassadors, engaged landowners, or local volunteers). Land ownership data can help identify key collaborators.

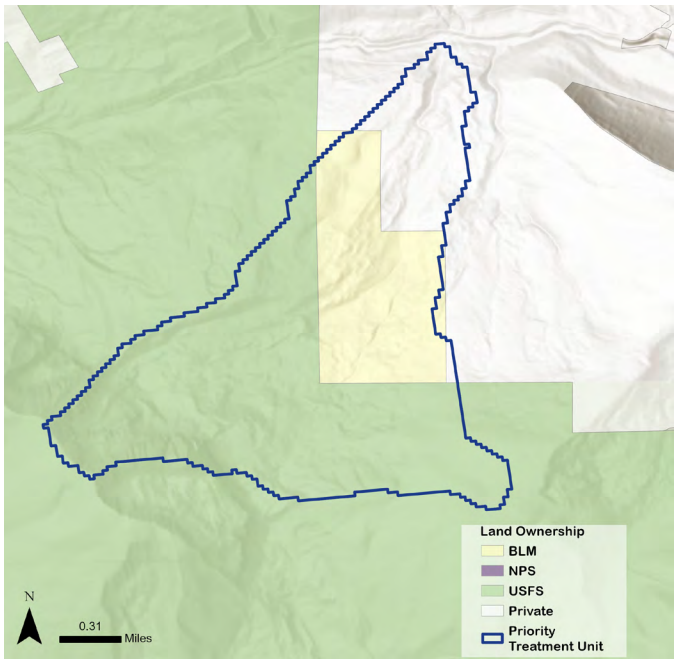


Figure 3: Portions of this priority treatment unit are owned by the U.S. Forest Service (USFS) (green), Bureau of Land Management (BLM) (yellow), and private landowners (white).

4. **Evaluate treatment options.** Use the dominant treatment type map (Figure 4a) and treatment feasibility layers (Figure 4b) to assess which treatment types (e.g., thin, prescribed fire, patch cut, mastication, etc.) might be suitable for the unit based on the local terrain, forest type, and land designation.

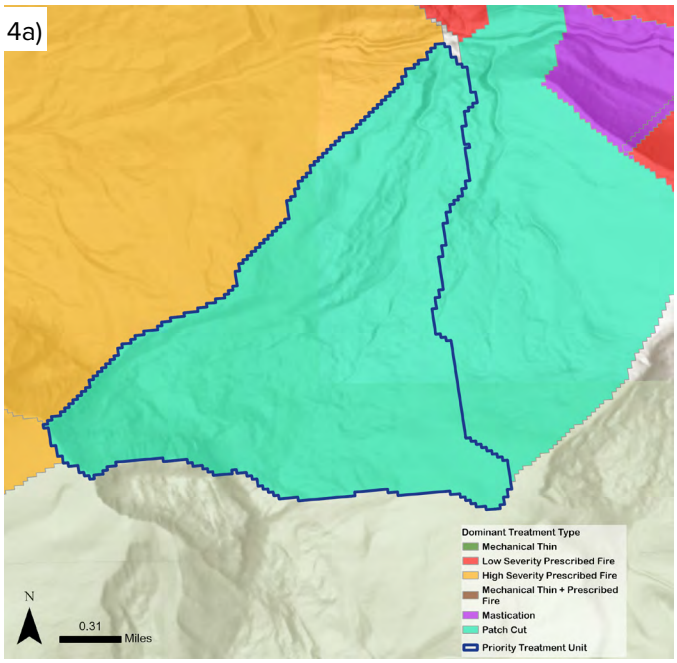


Figure 4a: The dominant treatment type recommended for this unit is patch cut (cyan). While this is a helpful starting point, multiple treatment types may be feasible and cost-effective within a single treatment unit.

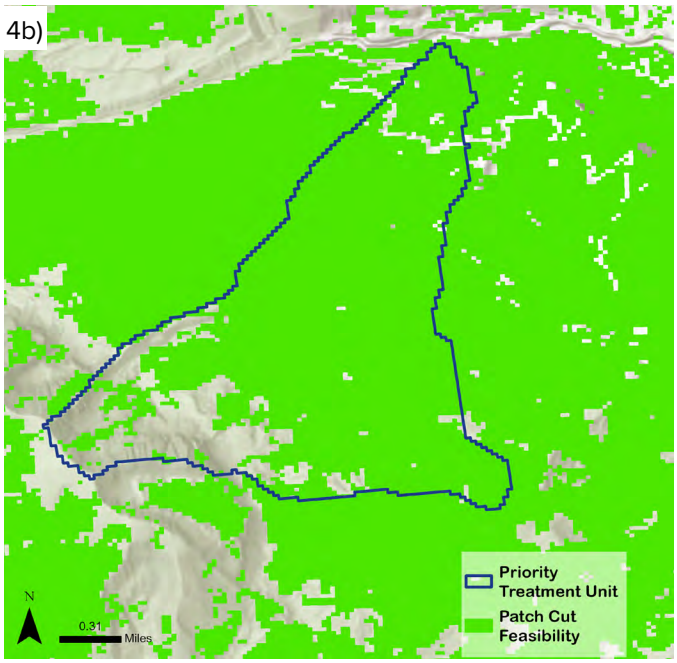


Figure 4b: Patch cuts are feasible (green) throughout most of this treatment unit. High severity prescribed fire, thinning, thinning followed by prescribed fire, and mastication are also feasible in similar areas (not pictured). Low severity prescribed fire is generally not feasible due to forest type constraints. Refer to the technical report for treatment feasibility assumptions.

5. **Delineate a project area targeting high risk or high return-on-investment.** Use spatial data to identify areas with the greatest risk (i.e., most negative expected net value change or eNVC) or highest benefit-cost ratio (i.e., risk reduction divided by cost filtered by treatment feasibility) for the vegetation management action(s) of interest. These often overlap, but one may be more useful than the other depending on your project goals.

    a. Use *risk* layers when focusing on a specific critical resource or asset, where high cost is justified to protect high-value infrastructure or ecosystems. For example, a public utility provider aiming to protect municipal drinking water may prioritize treatment areas based on a water specific layer rather than a composite map which weighs multiple resources and assets. On the risk maps, large negative values (dark reds) indicate negative impacts of wildfire on HVRAs and can be thought of as high risk, values near zero (yellow) indicate predominantly neutral impacts, and large positive values (dark greens) indicate positive impacts and can be thought of as low risk. In this example, the project area (purple outline) is targeting high-risk zones for water resources, highlighted as dark red areas on the map.

    b. Use *benefit-cost ratio* layers when weighing multiple resources or working within budget constraints, as it helps identify treatment with the greatest return on investment. This is especially useful for boundary-spanning organizations managing diverse values across the landscape, such as the West Region Wildfire Council.

6. **Determine the values driving the risk.** Use category-level risk layers to identify which HVRAs are contributing most to wildfire risk within your defined project areas. The specific HVRAs included in each category are listed in the HVRA table in the technical report. Understanding what is driving risk can guide appropriate treatment types and prescriptions, and help identify resource-specific partners (e.g., recreation or wildlife advocacy groups) to involve in planning.

Note: This use case begins with values at risk to encourage cross-boundary planning around shared resource objectives. However, land ownership (detailed in step 8) may need to be considered before values at risk where jurisdiction or implementation capacity significantly shapes project boundaries.

5a)

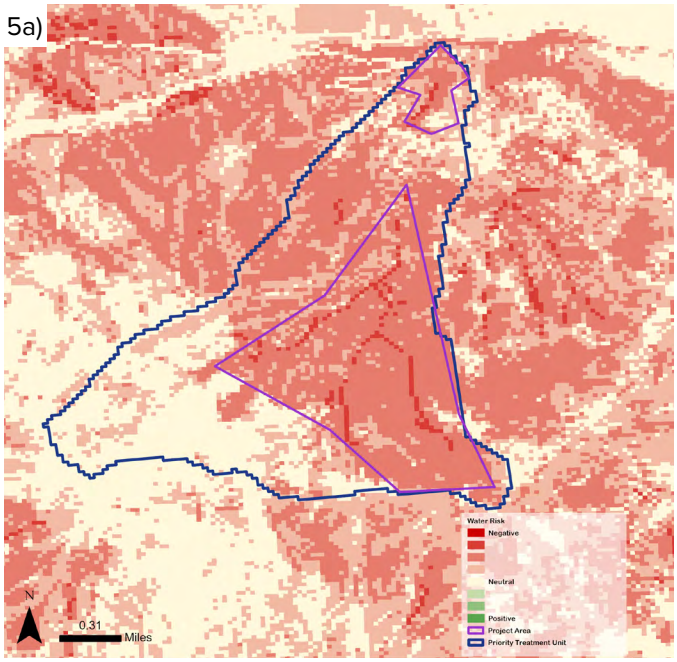


Figure 5a: Example project area (purple) delineated around areas with the highest wildfire risk to drinking water (dark red).

5b)

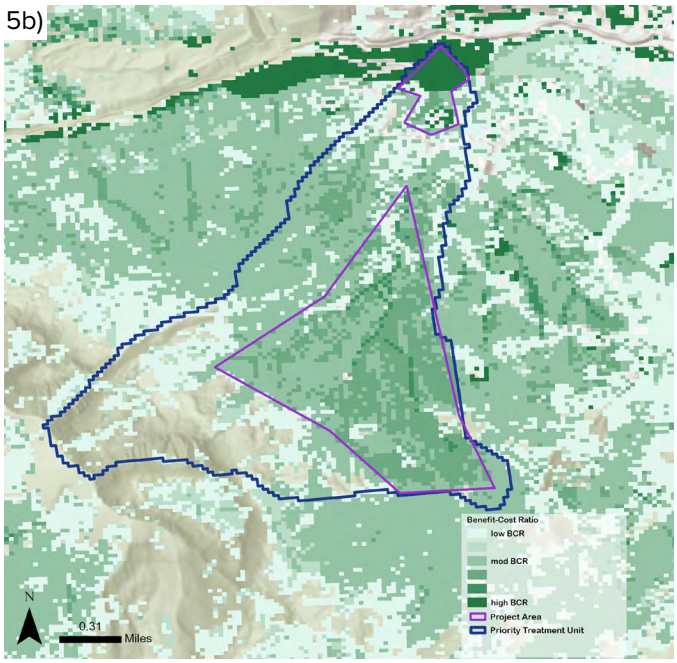


Figure 5b: Example project area (purple) delineated around areas with a high benefit cost-ratio (dark green), which incorporates wildfire risk to all HVRAs.

Example observations from the Wildcat Creek project area:

a. *Life safety* risk (i.e., evacuation routes) falls outside of this priority treatment unit (Figure 6a).

b. High *infrastructure* risk is concentrated at the top of the unit, driven by a PVC pipeline delivering drinking water to Crested Butte (Figure 6b). Targeted thinning around the pipeline is likely appropriate.

c. *Recreation* risk is low (neutral to slightly negative) and mitigation may not be necessary (Figure 6c). However, prescription design can support recreational values through techniques like aspen enhancement or surface fuel removal near trails.

d. Two *buildings* within the unit face high risk, but are likely better addressed through home hardening or home ignition zone work via Community Wildfire Protection Plans (CWPPs), than through RADS (Figure 6d).

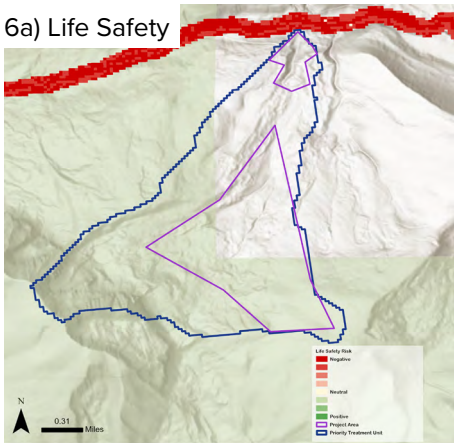
e. *Drinking water*, *wildlife*, and *vegetation* risks are elevated across much of the unit and in the defined project area (Figure 6e-g). For example:

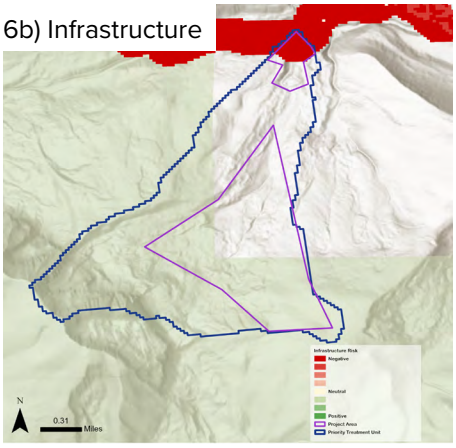
   i. Wildcat Creek is a key drinking water source, suggesting it would be important to engage with the Crested Butte Public Works Department even though they are not land owners in this area.

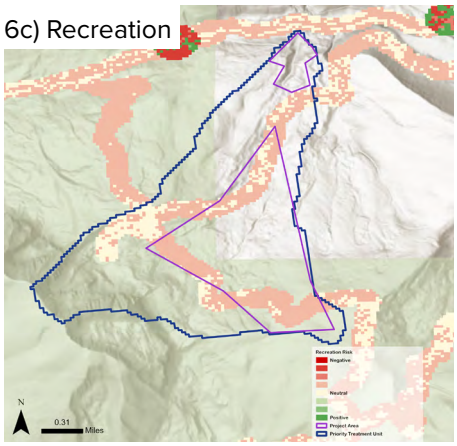
   ii. Treatments like small patch cuts (5-20 acres), thinning, or prescribed fire may be suitable for source water protection, wildlife habitat, and ecological benefit. While patch cuts are cost-effective here, large-scale clearing would not meet resource objectives.

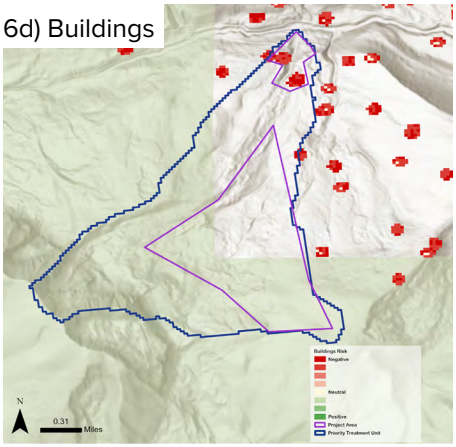
   iii. RADS may not account for all treatment options. Strategies like aspen promotion or forest type transitions could also be considered.

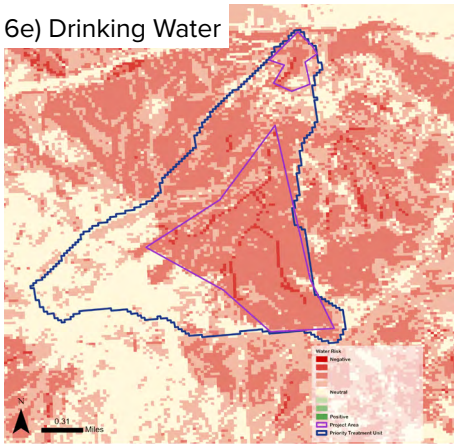
   iv. Treatment prescriptions should also consider topography, forest type, and operational constraints.

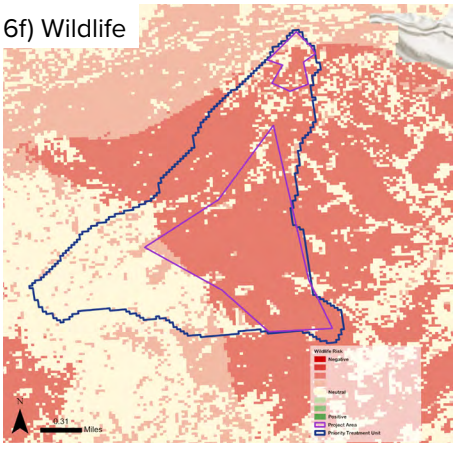












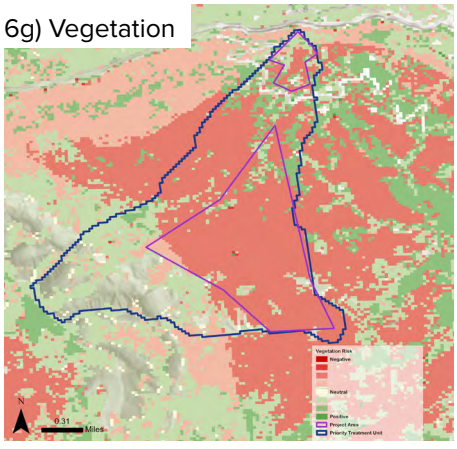
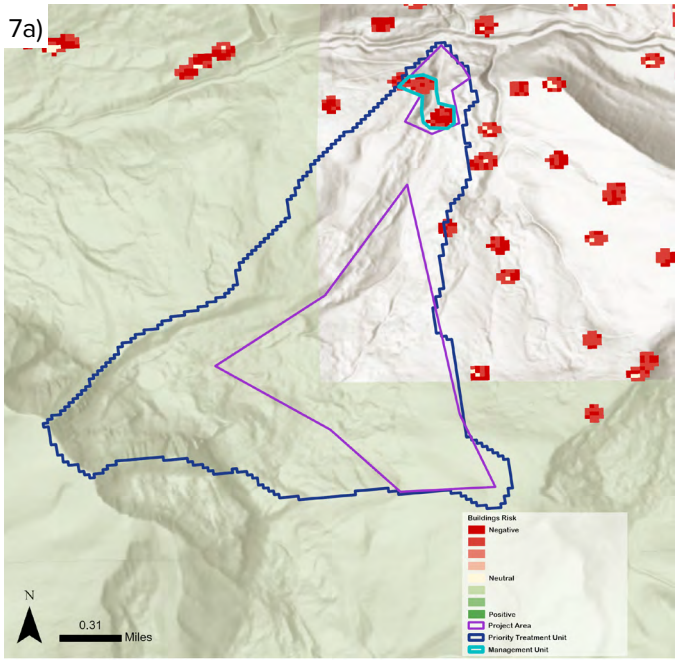
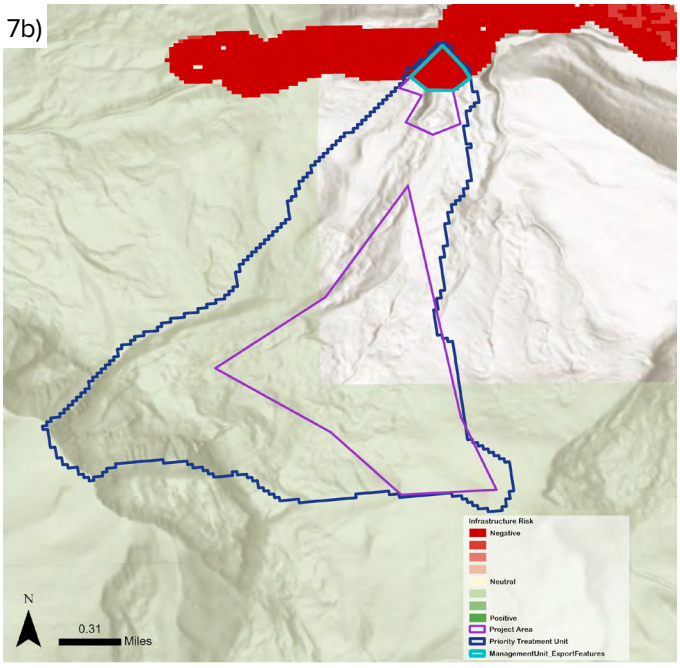


Figure 6a-g: Project area (purple) shown relative to category-level wildfire risk to a) life safety, b) infrastructure, c) recreation, d) buildings, e) drinking water, f) wildlife, and g) vegetation. Dark red indicates negative fire impacts (i.e., high risk), yellow is neutral, and green is positive.

7. **Organize value-specific management units.** If different HVRA categories are driving risk in different parts of the project area, consider sub-dividing the project area into value-specific management units. This enables treatment prescriptions to be tailored to specific resource objectives. In this example, potential units could include:

   - A buildings/infrastructure protection unit near developed areas (Figure 7a)
   - A pipeline-focused unit for protecting water infrastructure (Figure 7b)
   - A drinking water and vegetation unit that prioritizes ecological objectives while adapting prescriptions near recreation values (Figure 7c)





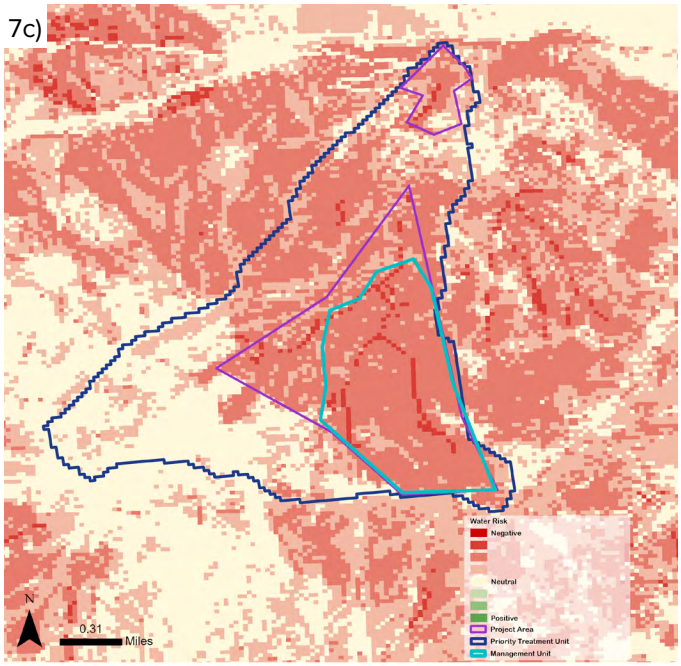


Figure 7a-c: Example management unit delineations (bright blue) within a project area (purple) that are tailored to specific values and assets: a) buildings, b) water infrastructure, and c) drinking water.

8. **Refine management units by land ownership.** Overlay land ownership to further refine management units by the likely implementor. This is critical for aligning funding, decision-making authority, and implementation capacity. While we recommend starting with values to promote shared resource objectives across boundaries, land ownership may be a more practical starting point in some landscapes.

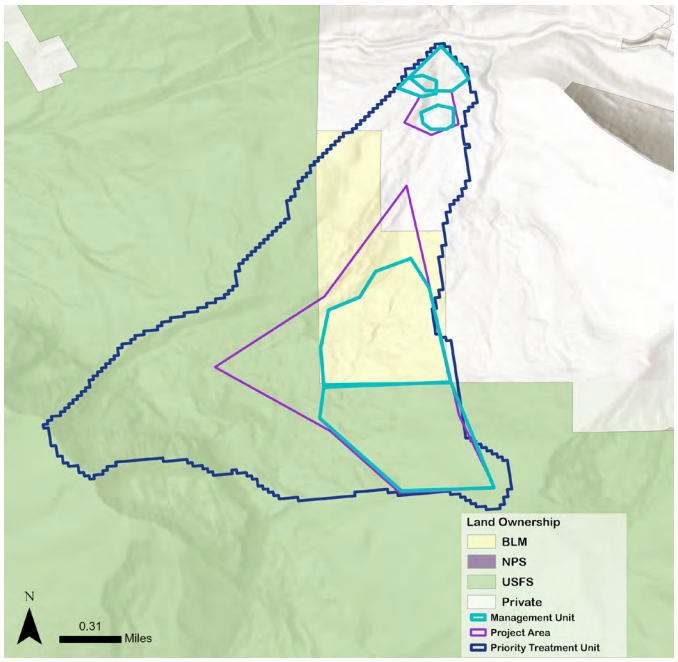


Figure 8: In this hypothetical example, the BLM may focus on ecological values like water and vegetation; the USFS might tailor prescriptions based on source water protection and recreation goals; and CSFS or private landowners may lead efforts around structure and infrastructure protection, along with broader ecological goals.

9. **Finalize management unit delineation.** With management units now defined based on treatment feasibility, values at risk, and land ownership, revisit the benefit-cost ratio of the proposed treatment(s) to further constrain the size of each management unit as needed.

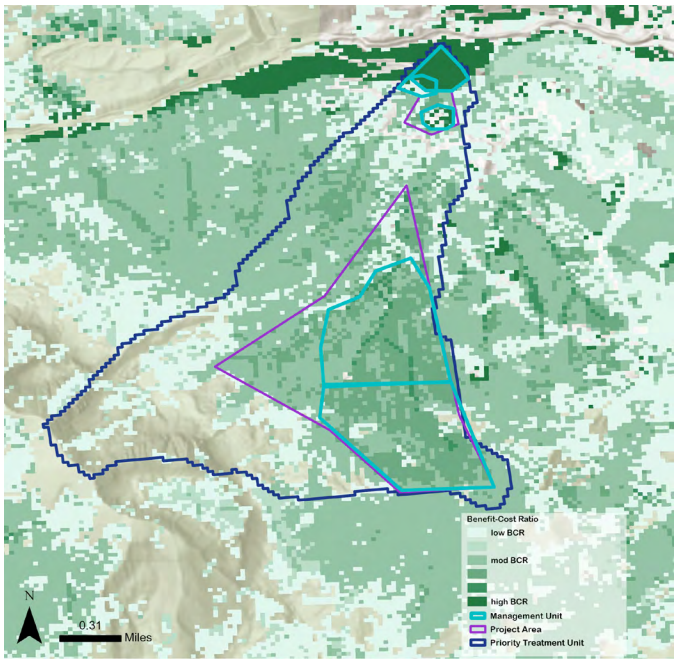


Figure 9: In this example, the management units (bright blue) closely align with the areas offering the greatest bang for the buck (dark green), while minimizing inclusion of lower-value areas (light green), indicating that further revision may not be necessary.

10. **Gather maps for public outreach and engagement.** Now that the project has been broken up into management units, refer to the section ***Mapping Tools to Translate Plans into Action*** for maps useful in public outreach, grant applications, and prescription development.

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Edinger, J. A., Dunn, J., Heeren, A., Rhea, A. E., Ritter, S. M., & Wolk, B. H. (2025). *Wildfire risk assessment and treatment prioritization for the Gunnison County Community Wildfire Protection Plan* (CFRI-2505). Colorado Forest Restoration Institute. https://cfri.colostate.edu/wp-content/uploads/sites/22/2025/04/Edinger_etal_WildfireRiskTreatmentPrioritzation_GunnisonCountyCWPP_CFRI_2505.pdf

Use Case II: Small to big

In this hypothetical use case, we again use the Gunnison County Risk Assessment Decision Support (RADS) data (Edinger et al., 2025) to illustrate how partners can identify and refine planned or in progress vegetation management units that overlap and align with landscape-scale priorities. Figures are numbered sequentially to align with each step in the process and figure captions provide key information for interpretation.

1. **Map short-term planned projects that are likely to be implemented within the next 1-2 years.** This process identifies where treatments are expected on the landscape and what types of actions are planned. Some projects may already be underway, while others may still be in the planning stages or awaiting funding.

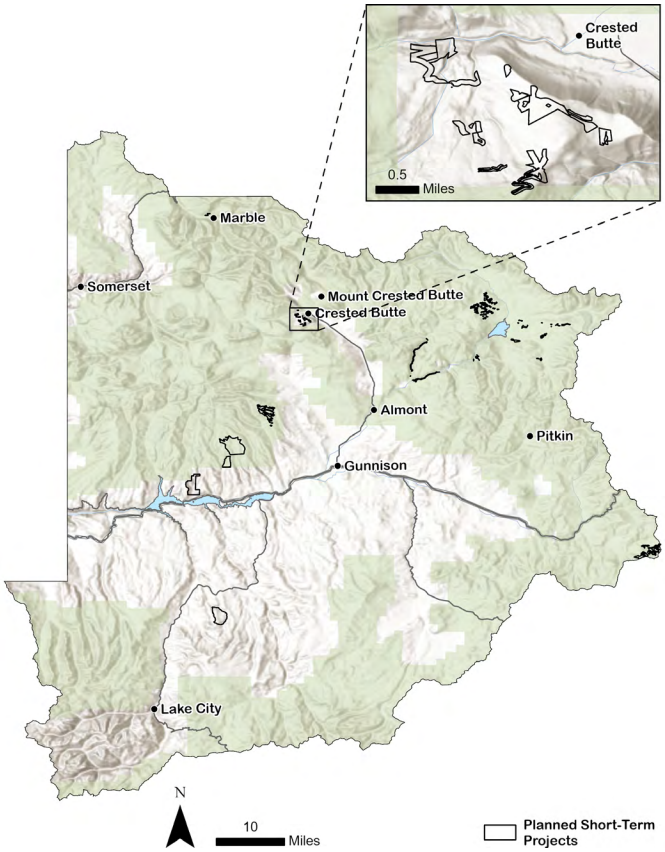


Figure 1: This hypothetical use case from Gunnison County highlights how the RADS leadership team, Upper Gunnison Shared Stewardship Council, and local fire experts compiled specific, actionable treatments from multiple agencies (e.g., USFS, BLM, CSFS, West Region Wildfire Council) to support the Community Wildfire Protection Plan (CWPP) objectives. This use case focuses on the planned Trappers Crossing Project near Crested Butte (inset).

2. **Overlay planned projects with landscape-scale treatment plan.** This highlights areas where you can align implementation efforts with broader strategic goals.

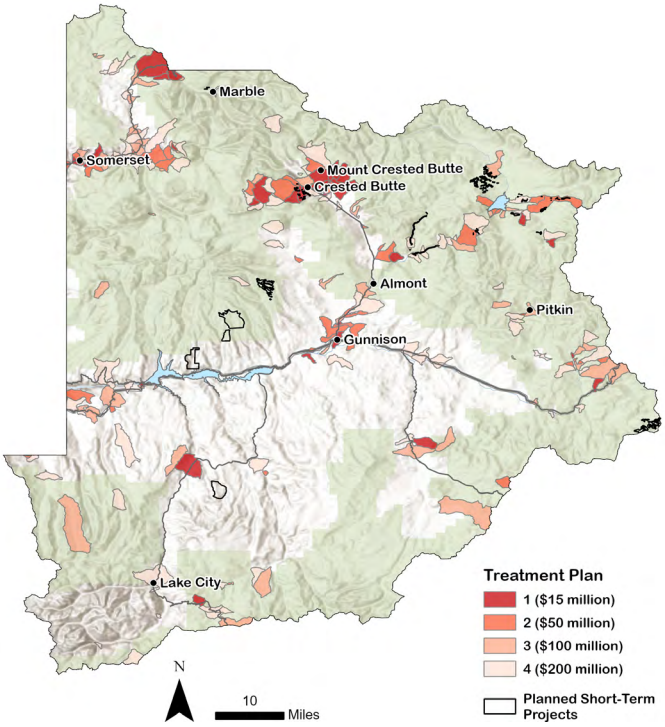


Figure 2: Vegetation management projects planned for completion in the next 1-2 years in Gunnison County (black) overlaid with the landscape-scale treatment plan where red to pink polygons represent treatment priorities tiered by budget.

3. **Identify areas where the planned projects overlap with priority treatment units.** Focus resources on areas where short-term implementation aligns with top landscape priorities to maximize strategic impact and get work done efficiently.

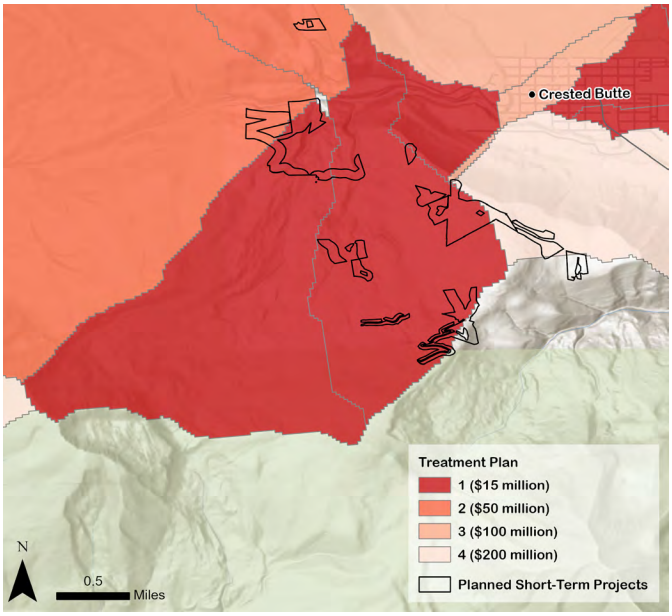
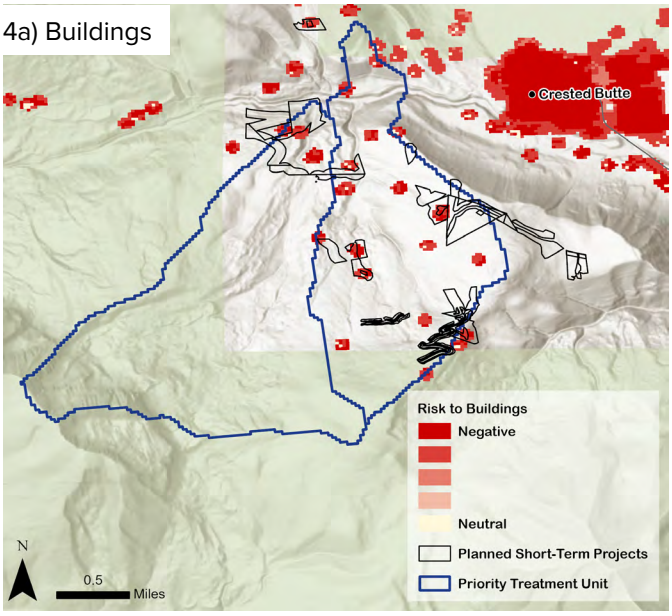


Figure 3: Example of short-term planned projects (black outlines) overlapping with priority treatment units (dark red polygons).

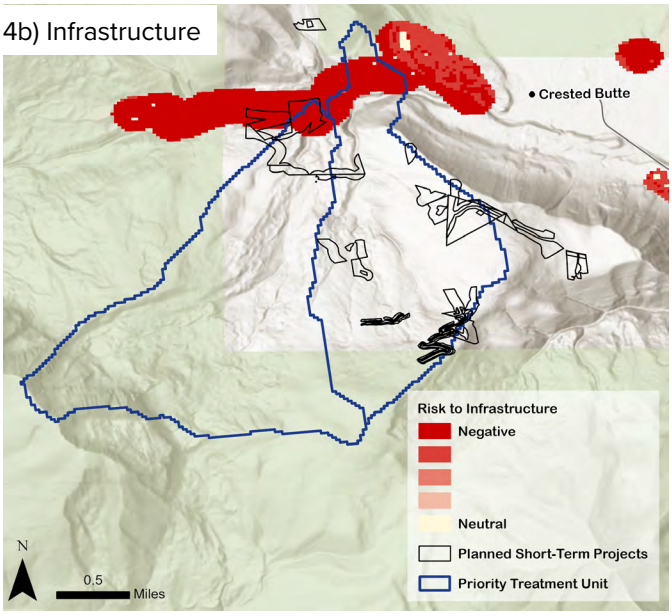
4. **Compare stated project objectives with mapped values at risk to assess alignment.** The planned Trappers Crossing project lists objectives such as creating defensible space, reducing fuels, and thinning along roads to improve ingress and egress. RADS data shows that the planned treatments primarily overlap zones with high building risk (Figure 4a) and include areas with high risk to infrastructure, such as the Crested Butte drinking water pipeline (Figure 4b). This aligns with the project's stated goals. In addition, the planned projects provide co-benefits to water and wildlife resources (Figure 4c-d).

However, some concentrated areas of very high life safety risk (primary evacuation routes, Figure 4e) and infrastructure risk (Crested Butte drinking water pipeline, Figure 4b) fall outside the planned treatment units. Addressing these gaps, especially the life safety concerns, would strengthen the project's stated goals around improving ingress and egress. Other portions of the treatment unit, particularly in the Wildcat Creek headwaters, contain significant water, wildlife, and vegetation values at risk which are addressed in ***Use Case I: Big to small***.

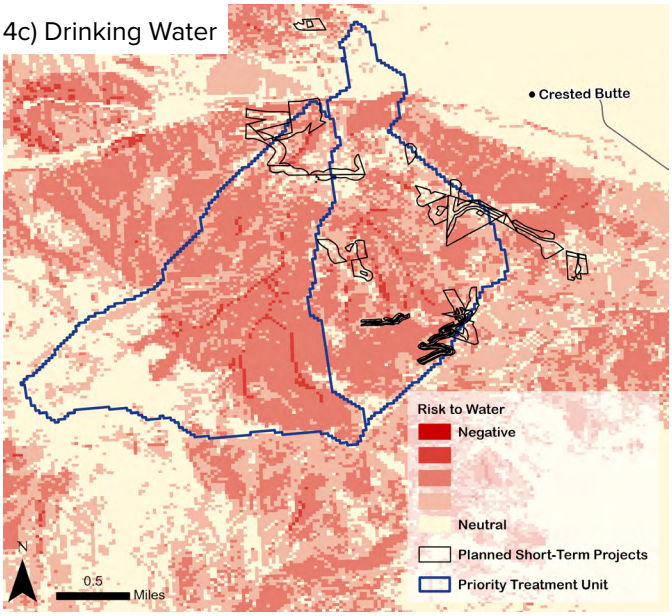
4a) Buildings



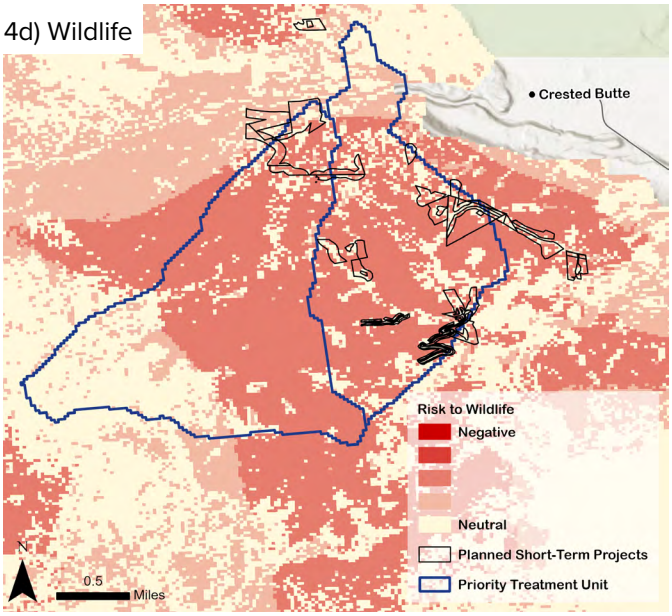
4b) Infrastructure



4c) Drinking Water



4d) Wildlife



4e) Life Safety

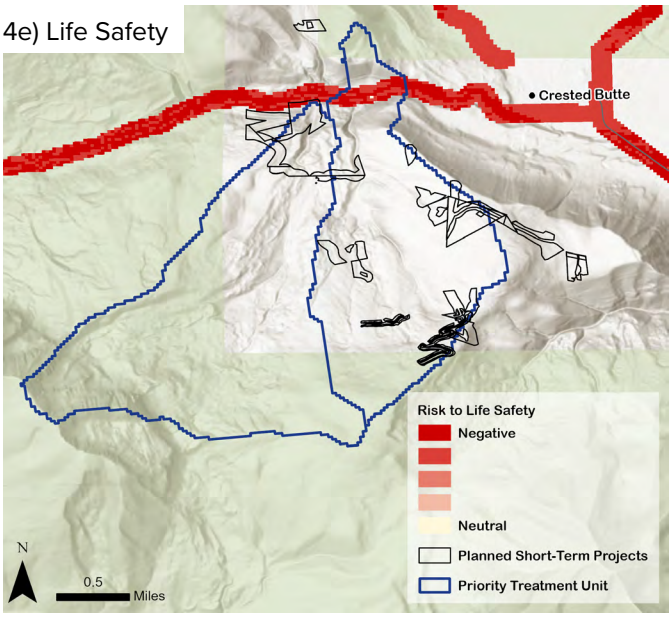


Figure 4a-e: Hypothetical planned Trappers Crossing project polygons (black outlines) relative to a) building, b) infrastructure, c) water, d) wildlife, and e) life safety risk. Dark reds represent negative wildfire impacts (i.e., high risk), yellow represents neutral, and green represents positive wildfire impacts.

5. **Identify the landowner and implementing agency to verify permissions, permitting requirements, and best management practices.** Since 2012, the West Region Wildfire Council (WRWC) has partnered with private landowners and the Trappers Crossing Homeowner's Association to implement vegetation management projects in this area. If you haven't already, reach out to the WRWC to coordinate efforts and ensure alignment with ongoing vegetation management work.

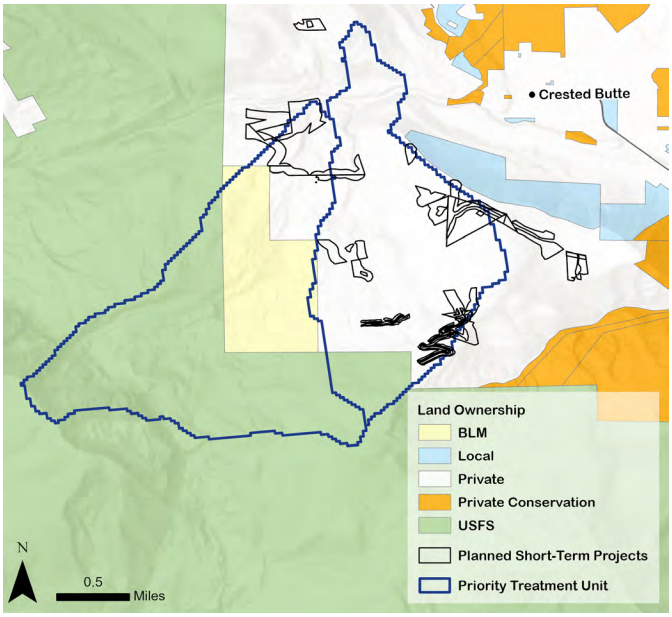


Figure 5: Planned projects are located on private lands (white), spanning multiple individual landowners.

6. **Gather maps for public outreach and engagement.** Now that the project has been broken up into management units, refer to the section ***Mapping Tools to Translate Plans into Action*** for maps useful in public outreach, grant applications, and prescription development.

REFERENCE

Edinger, J. A., Dunn, J., Heeren, A., Rhea, A. E., Ritter, S. M., & Wolk, B. H. (2025). *Wildfire risk assessment and treatment prioritization for the Gunnison County Community Wildfire Protection Plan* (CFRI-2505). Colorado Forest Restoration Institute. https://cfri.colostate.edu/wp-content/uploads/sites/22/2025/04/Edinger_etal_WildfireRiskTreatmentPrioritzation_GunnisonCountyCWPP_CFRI_2505.pdf

Exception A: Use POD lines to prevent fire spread into priority treatment units

The USFS identified a 508-acre treatment along County Road 742 and Spring Creek Road (Figure 1). While this area spans multiple priority treatment units, it is strategically designed as a potential operation delineation (POD) treatment that includes hand thinning and pile burning to reduce the potential for undesirable fire spread to adjacent highly valued resources and assets. Strategically placed fuels treatments along POD boundaries can also help improve firefighter responder safety and access and provide anchor points for expansion of proactive fire management and landscape vegetation management treatments in the future (Thompson, 2023).

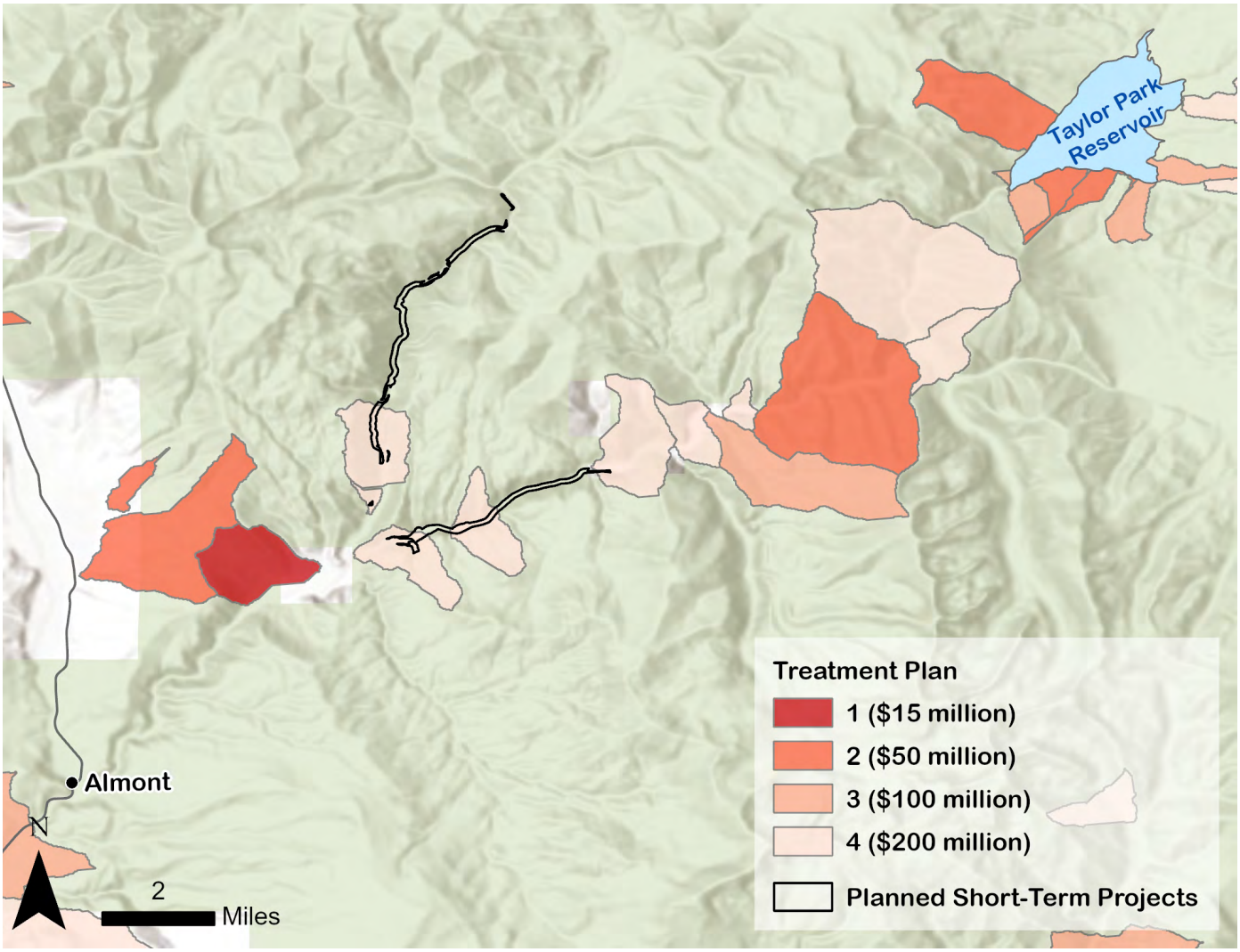


Figure 1: Planned POD boundary treatment (black outline) along roads relative to landscape-scale treatment plan (dark red to light pink).

These POD boundary treatments are characterized by:

- **High suppression difficulty index under current conditions** (dark teal), indicating areas that are relatively unsafe or inefficient to engage with fire based on current conditions (Figure 2a).
- **High benefit-cost ratio for POD boundary treatment** (dark orange), showing that vegetation management would significantly improve operational safety and efficiency (Figure 2b).
- **High transmission risk** (grey polygons), meaning fires starting in these PODs are likely to spread and cause damage to adjacent areas (Figure 2).

Together, these factors underscore the importance of prioritizing POD boundary treatments not only to mitigate current wildfire risks, but also to create safer, more effective opportunities for future fire response and landscape resilience.

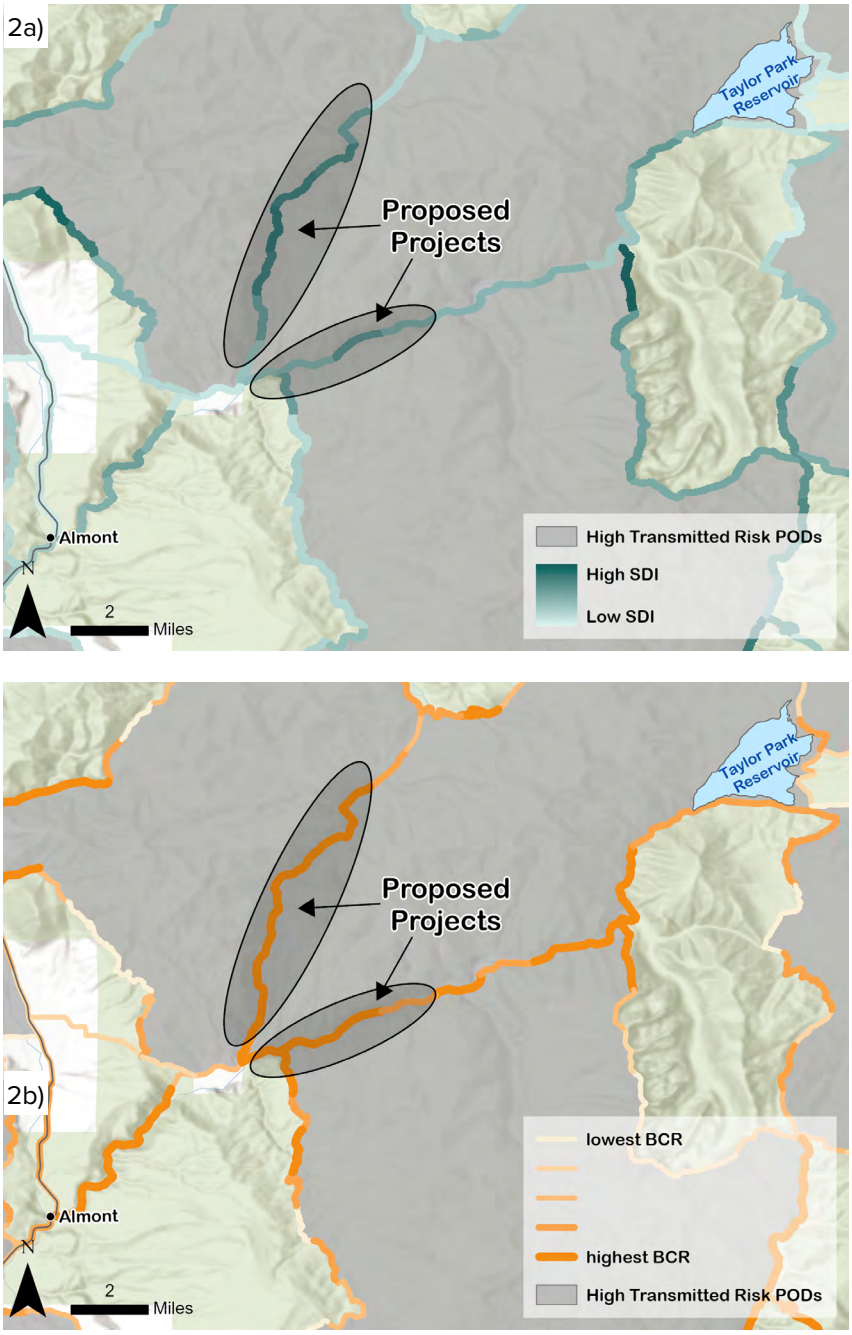


Figure 2a-b: Planned POD boundary treatment (black outline) relative to a) current suppression difficulty index (light to dark teal) and b) the benefit-cost ratio of vegetation management on suppression difficulty index (light to dark orange).

REFERENCE

Thompson, M. P. (2023, October 3). *POD boundaries and fuel breaks are not synonymous: Considerations for potential operational delineations (PODs) and strategic fuel breaks*. U.S. Forest Service, Rocky Mountain Research Station. https://research.fs.usda.gov/rmrs/understory/pod-boundaries-and-fuel-breaks-are-not-synonymous-considerations-potential

Exception B: Connect with priority work in adjacent high-risk areas

The U.S. Forest Service proposed Project A along County Road 55 and Project B with the Colorado State Forest Service near Abbeyville (Figure 1, black planned short-term project polygons). Both projects fall just outside of priority treatment units (Figure 1, light pink to dark red), but treating in these locations can still be beneficial by building off priority work providing an anchor for future management.

Even though the projects are not located in priority treatment units, there is still high risk to highly valued resources and assets (HVRAs) within these planned short-term project boundaries, specifically to buildings, water resources, and wildlife habitat. Fuel reduction treatments in these projects can reduce risk to these HVRAs but might be less cost effective than projects located in priority treatment units.

Both projects are adjacent to priority treatment units and, with additional treatment, can be connected to future projects within those units (Figure 1, purple hypothetical treatment polygons).

Lastly, cross-boundary management in the corridor from Taylor Reservoir to Tincup could require a complex strategy involving many planning approaches, including:

1. Building off projects A and B by adding additional treatments to improve potential operational delineations (PODs) (Figure 1, green hypothetical treatment polygons).
2. Directly addressing wildfire risk to HVRAs with projects located in priority treatment units (Figure 1, teal hypothetical treatment polygons).
3. Linking projects together with additional treatments to achieve desired conditions at the landscape scale (Figure 1, brown hypothetical treatment polygons).

These areas illustrate how extending treatments beyond priority boundaries can provide ecological and strategic value, and serve as anchors for future, larger-scale restoration efforts.

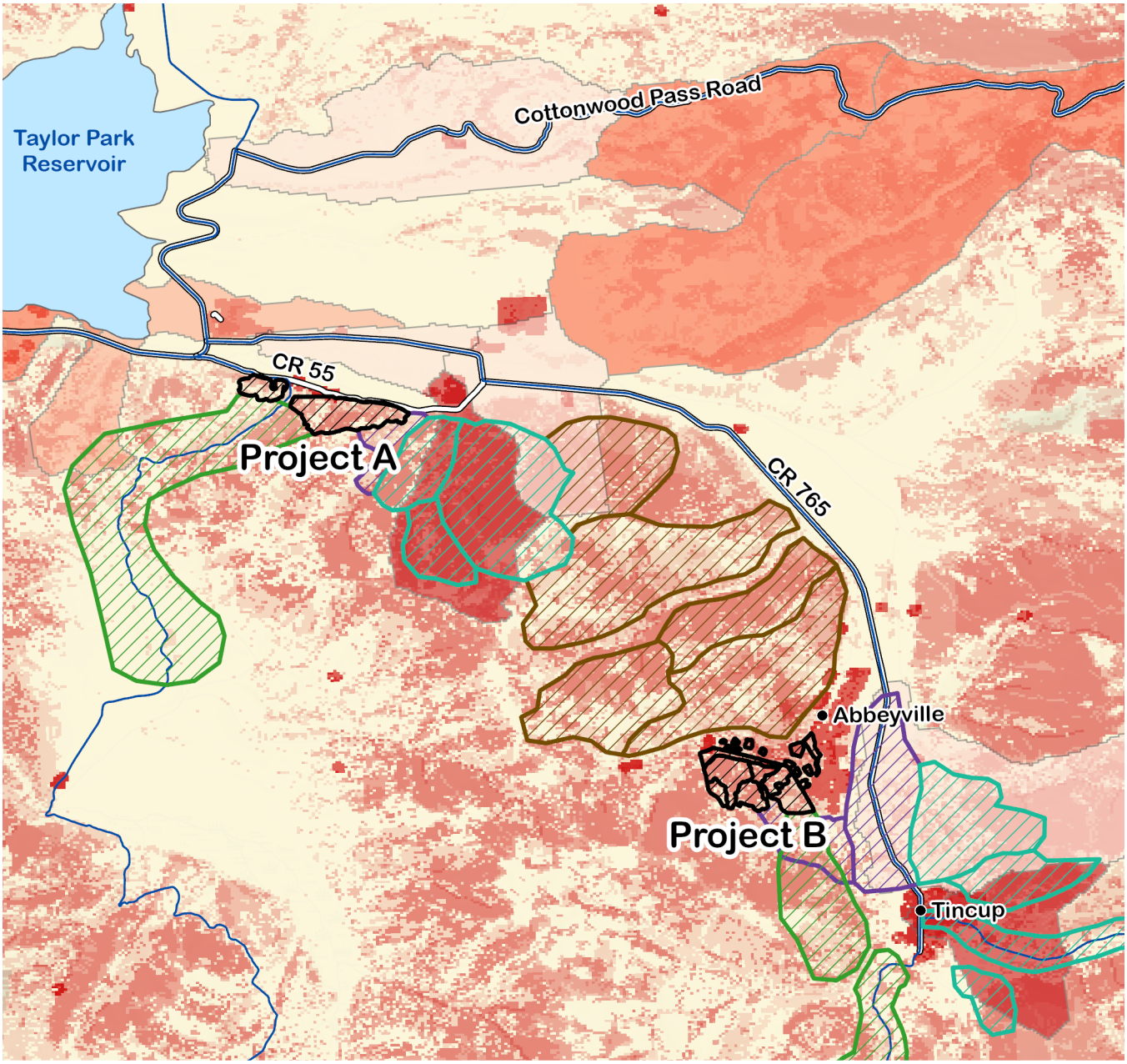


Figure 1: Example of some planned projects that fall just outside of priority treatment units, but still reduce wildfire risk to local values and assets and serve as anchors for future vegetation management work. Dark reds represent negative wildfire impacts, yellow represents neutral, and green represents positive wildfire impacts.

Exception C: Build social momentum for prescribed fire

Bertha Gulch is a planned cross-boundary forest restoration project located six miles southwest of the Taylor Park Reservoir. The proposed project spans U.S. Forest Service, Colorado State Forest Service, and private lands and targets approximately 62 acres for thinning, prescribed fire, and timber sales (Figure 1, black outlines).

Although the project lies outside a RADS priority treatment unit (colored polygons), it addresses areas of elevated wildfire risk within the wildland-urban interface (WUI), where several homes in the Abbeyville area (grey polygons) are interspersed with forested land. As such, the project presents a strong opportunity to reduce risk to structures while improving forest conditions. The cross-boundary nature of the project reflects alignment among participating agencies and landowners and provides a framework for implementing prescribed fire in a WUI setting.

In addition to local risk reduction benefits, Bertha Gulch could function as a demonstration project for prescribed fire in the local community. Successful implementation could provide a visible example of prescribed fire outcomes and could help build social support for expanded fire use in high-priority areas, like the nearby RADS priority treatment unit east of County Road 765 where the dominant recommended treatment type is prescribed fire (orange polygon).

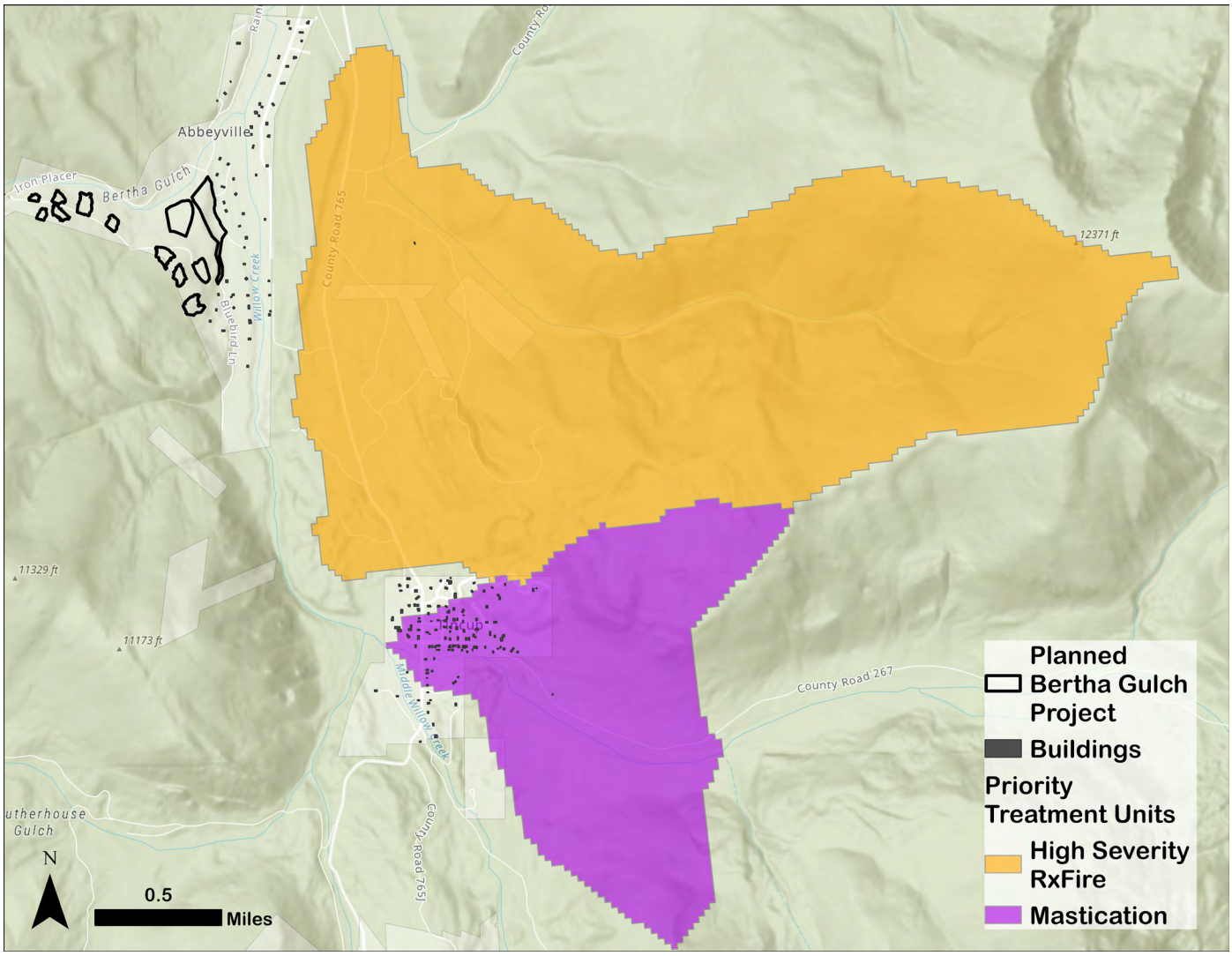


Figure 1: Planned Bertha Gulch project (black outlines) relative to homes in Abbeyville (grey polygons) and RADS priority treatment units where the dominant treatment types are high severity prescribed fire (orange polygon) or mastication (purple polygon).

Mapping Tools to Translate Plans into Action

Once management units have been delineated, the next step is to translate that planning work into action. At this stage, clear and targeted mapping products become critical tools for communicating priorities, securing funding, and developing treatment prescriptions. Effective maps help diverse audiences - including landowners, local officials, funders, and contractors - understand the purpose, rationale, and design of proposed projects. Below are suggested maps to include when advancing a project from planning to implementation:

- **Who are the lead implementors?**
  Clearly show the delineated management units (bright blue) overlaid with land ownership to indicate the lead agency or implementing partner responsible for each unit (Use Case 1, Figure 8). This supports grant applications by clarifying jurisdiction and implementation capacity.

- **What values is this treatment protecting?**
  Include maps showing which Highly Valued Resources and Assets categories (e.g., water, infrastructure, wildlife, recreation, etc.) are driving risk in each management unit (Use Case 1, Figure 7). These maps represent current or baseline risk conditions before any treatments are applied, helping to identify priorities for management.

- **What is the current forest structure and composition?**
  Display dominant forest types and canopy cover within each management unit (e.g., NAIP, Landfire, etc). This helps planners and contractors understand existing forest conditions to support prescription development.

- **What is the return on investment of this treatment?**
  Highlight areas within each management unit where treatments offer the highest benefit-cost ratio (Use Case 1, Figure 5b). This is particularly useful when seeking cost-share funding or prioritizing phases of implementation.

- **What are the proposed treatment types?**
  Display feasible treatment types (e.g., patch cuts, thinning, prescribed fire) within the management unit of interest (Use Case 1, Figure 4b). This helps contractors and planners understand what actions are realistic given terrain, forest type, and cost.

- **What is the treatment plan?**
  Show planned treatment locations, types, and spatial patterns within each management unit to illustrate how risk will be addressed. These maps may depict the expected landscape changes after treatment implementation which would be useful for communicating treatment plans to stakeholders and funders.