USFS Trail Development Process

FROM CONCEPTION TO CONSTRUCTION

Steps in the Development Process

- **Idea**: Someone has an idea for a trail they want to build. What is the purpose of the trail?
- **Assess**: Assess the available land for a potential project to determine if site is feasible for trail development. Can a sustainable trail be built in the terrain.
- **Plan**: Plan route for trail corridor within the parameters discovered through NEPA and other regulations/laws.
- **Design**: Create detailed plan for trail tread construction, including any structures that need to be built.
- **Build**: This is where the fun starts! Construction of the trail begins with staff, volunteers, partners, contractors, or a combination of all these groups.
- **Maintain**: A newly constructed trail remains and living and breathing entity that requires attention. Most trails require annual or bi-annual maintenance of some kind.

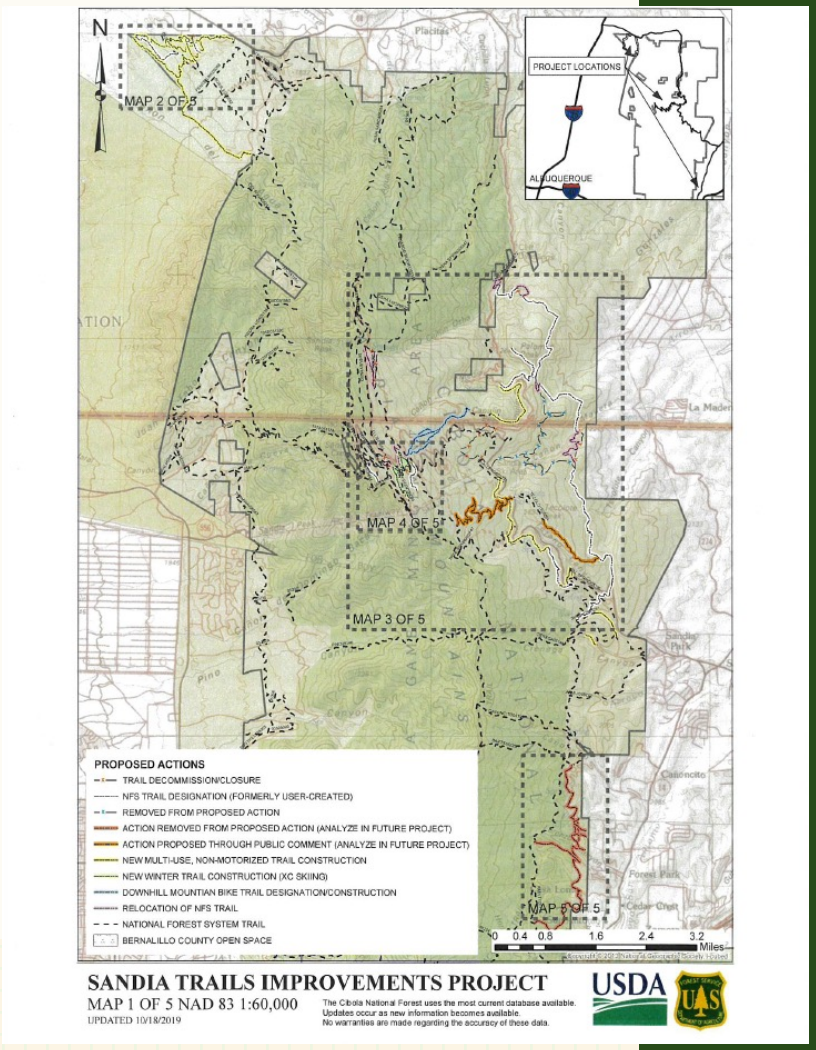
Idea Phase

What are the goals of the trail or trail system?

- Promote recreation in a new area where there were previously very few or no trails
- Bring new recreation opportunities to a community, such as mountain biking or adaptive mountain biking, cross country skiing, snowmobiling, or ADA accessible trails
- Provide transportation or alternative transportation from one place to another
- Protect a natural resource area
- Provide a safe route for users to experience an incredible view or other point of interest
- Create sustainable recreation opportunities and manage user conflicts

Assessment Phase

- **Define project vision, goals, and objective:** create quantitative and qualitative goals for a trail or trail system, ie. building a trail system for a metro area that will diminish conflicts between user groups and will provide 20 miles of recreation in a beautiful landscape.
- **Investigate applicable laws for project**: Many state and federal laws dictate that we go through an environmental review process before proceeding with any new construction in a National Forest
- **Scout sites to collect field notes and geospatial data of the area:** This will be the first of many site visits necessary to complete a trail. This initial visit is imperative to understand where exactly the trail can and cannot be located based on sustainable trail practices
- **Create cost considerations for future phases:** will consulting services be necessary to complete this project, who will be building the trail and how will it be maintained after construction.



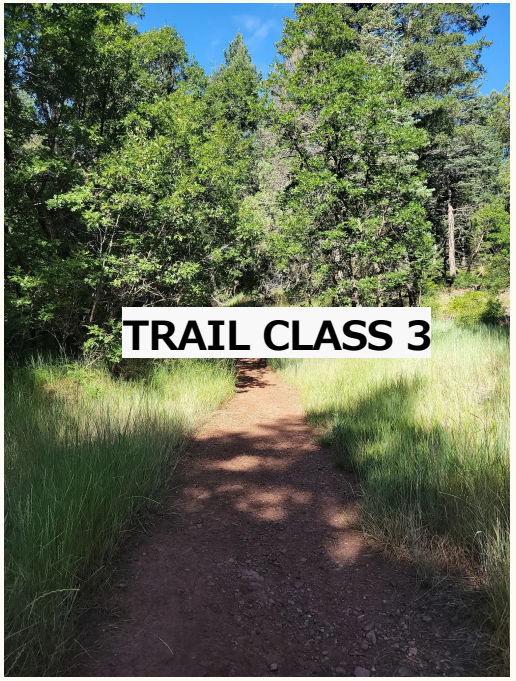
Planning Phase

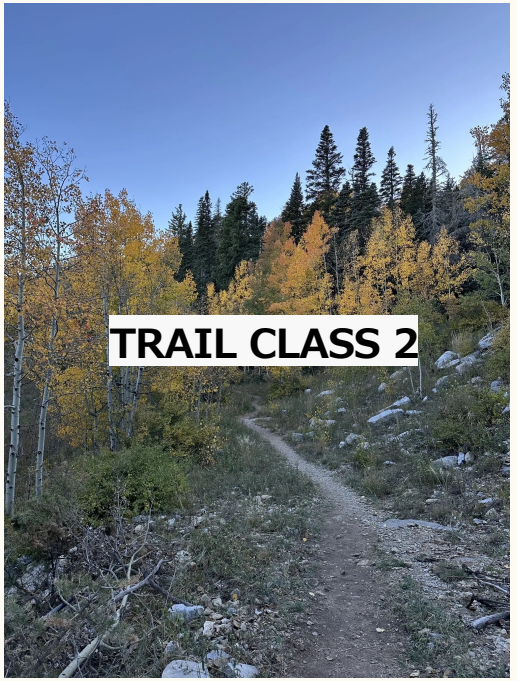
- Review and refine project vision, goals, and objectives
- Scout sites again to collect geospatial data for more exact trail corridors
- Create trails concept map graphic
- Initiate environmental review process if necessary
- **Define trail fundamentals**: trail type, trail class, managed use, designed use, design parameters

Trail Fundamentals

- **Trail Type**: The predominant trail surface and general mode of travel accommodated by a trail. 3 types: Standard/Terra, Snow, and Water trail.
- **Trail Class**: There are 5 Trail Classes, ranging from the least developed (Trail Class 1) to the most developed (Trail Class 5)
- **Managed Use**: The mode of travel that is actively managed and appropriate on a trail, based on its design and management. Indicates management intent to accommodate a specific use. There can be more than one Managed Use per trail or trail segment.
- **Designed Use:** Mode of travel that requires the most demanding design, construction, and maintenance parameters and that, in conjunction with the applicable Trail Class, determines which Design Parameters will apply to a trail.
- **Design Parameters:** Technical guidelines for the survey, design, construction, maintenance, and assessment of a trail, based on its Designed Use and Trail Class.
- Sample Trail Management Objective (TMO)

Trail Class Examples





Environmental Review Process

Laws and regulations trails may encounter in new trail construction

- NEPA (National Environmental Protection Act)
- NHPA (National Historic Preservation Act)
- ESA (Endangered Species Act)
- Wild and Scenic Rivers Act (WSRA)
- National Forest Land Management Plan

NEPA

- National Environmental Protection Act
- Three levels of review for NEPA depending on the amount of construction required and where the constructed trail will be located
- CE, EA, EIS

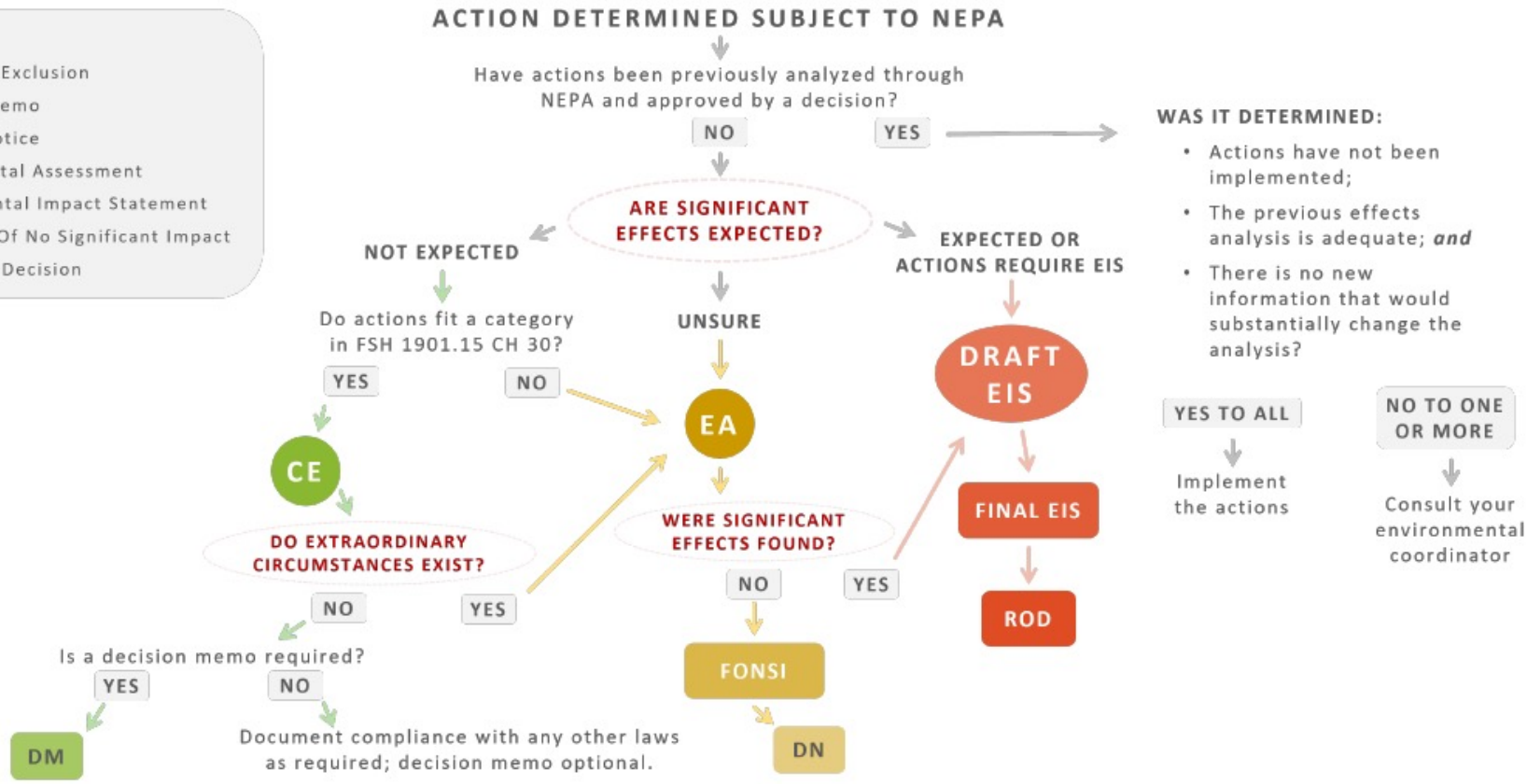
Levels of Review for NEPA

- **Categorial Exclusion:** Document written if no significant impact to the environment is expected.
- **Environmental Assessment:** will always be conducted, **unless** the project manager does not expect to find that any significant impact will occur through the duration of the project. If based on the EA no significant impact is determined, a Finding of No Significant Impact statement is written. If significant impact is determined, an Environmental Impact Statement must be written next.
- **Environmental Impact Statement:** Document completed to explain potential impacts to the environment that this project will cause and how the impacts will be mitigated. Statement is written from the start if the project manager expects that there will be a significant impact to the environment without certain measures taken.

Determining the Level of NEPA

ACRONYMS

CE = Categorical Exclusion
DM = Decision Memo
DN = Decision Notice
EA = Environmental Assessment
EIS = Environmental Impact Statement
FONSI = Finding Of No Significant Impact
ROD = Record of Decision



Working with Wildlife

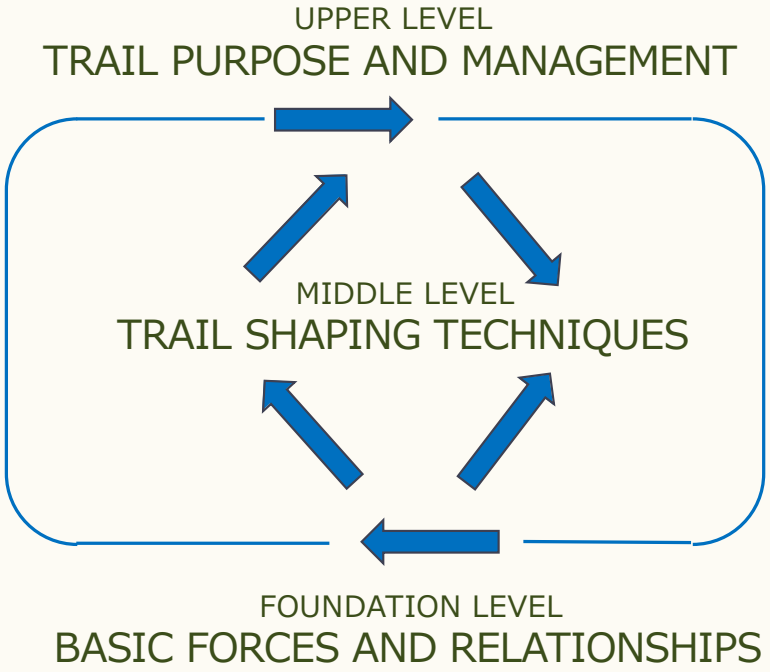
- Project decisions are informed by **Endangered Species Act** and **species of conservation concern** as detailed in the Cibola Forest Land Management Plan
- For each proposed trail project, a wildlife biologist will check if the project area is home to any protected animal or plant species
- If there is a known protected species or species habitat in the project area, the trail project will need to adapt

Working with Heritage

- Project decisions are informed by NHPA (National Historic Preservation Act)
- This law requires us to make sure we will not impact a heritage site
- In the Sandias the concerns are both native sites such as petroglyphs, and early settler sites such as mining areas
- Similarly to working with wildlife, for each trail project we propose, a member of the Heritage crew will need to check that our proposed work area corridor is not within any heritage sites
- This will sometimes require us to redesign a trail or trail section multiple times to avoid impacting any sites

Design Phase

- Create and share any needed detailed construction drawings
- Finalize environmental review process (if necessary)
- Flag the trail with ribbons flags to dictate where the trail corridor will be cut once final decision on environmental review process is made
- Create a sign plan as determined by design parameters
- Decision memo for STIP



What is a Sustainable Trail?

- Trail sustainability is based on three overlapping concepts: environmental, social, and economic sustainability.
- **Environmental sustainability:** Avoids or minimizes impacts to natural and cultural resources. The trail tread and infrastructure can physically withstand the expected effects of human and natural forces
- **Social sustainability:** Trail users and the community like the trail, use it, and support it.
- **Economic sustainability:** Trained workers and sufficient funds are available to construct, maintain, and repair the trail.

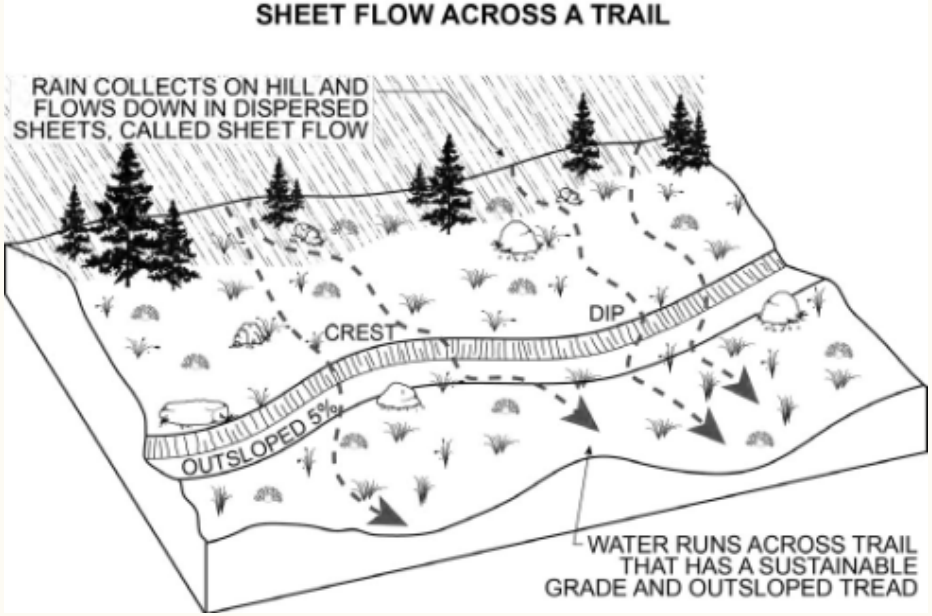
Environmental (Physical) Sustainability

A physically sustainable trail doesn't depend on building drainage structures to drain water off the tread and resist erosion. It is aligned along the elevation contour with an undulating pattern of crests and dips, called grade reversals.

The deeply rutted and abandoned trail on the left (solid line) was built without physical sustainability principles in mind. The trail on the right (dotted line) is nearby and is well-located on a hillside at an average grade appropriate for the prevailing hillside slope and with frequent grade reversals. USDA photo by Kerry Wood.

Build Phase

- We begin by cutting the corridor for trail, 6ft wide and 8-12ft tall is our typical corridor for class 2 trails.
- After all the cut material is dispersed, someone will place pin flags every 5’ to show where the tread will be dug. We most often dig trail 18-24” wide for class 2 trails.
- The pin flagging stage is often when final decisions are made about exact trail layout and when frequent grade reversals are included into the design for sustainability.
- As the tread is constructed, other previously determined structures such as bridges, retaining walls, switchbacks, or steps, may need to be included.



Maintenance Phase

- Every trail requires some amount of maintenance
- If a trail is designed well, it will need very little tread maintenance, but vegetation will continue to grow, and trees will continue to fall on trails for as long as they exist
- An important part of designing a trail is thinking about how maintenance will continue after its initial construction.
- Make sure you have the resources, funds, and ability to continue to maintain a trail