



September 29<sup>th</sup>  
2023

# You Get What You Plan For (Together)

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Vermont Trails Symposium

Mariah Keagy, Sinuosity Flowing Trails  
Nick Bennette, Vermont Mountain Bike Association

# Agenda

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- Introductions: Who We Are | Who You Are
- Bringing a Trail to Life
- The Trail Planning Process
- Defining your 'Why'
- Getting Started
- The Human Touch: Stakeholder Mobilization
- Case Studies: What Went Right...and Wrong



# Who We Are

## Mariah Keagy

*Designer & Planner*

*Sinuosity Flowing Trails*

*VTGC Co-Vice Chair*

## Nick Bennette

*Executive Directory*

*Vermont Mountain Bike Association*

*VTGC Co-Chair*



VERMONT MOUNTAIN BIKE ASSOC.  
SINCE  1997



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**FEATURING:**  
**MARIAH KEAGY**



**TOPICS:**

- VERMONT
- TRAIL PLANNING AND DESIGN
- HIGH QUALITY TRAIL EXPERIENCES
- TRAIL MAINTENANCE
- BIKE PARKS
- THE STATE OF THE TRAIL INDUSTRY
- AND A WHOLE LOT MORE

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**FEATURING:**  
**NICK BENNETTE**



VERMONT MOUNTAIN BIKE ASSOC.  
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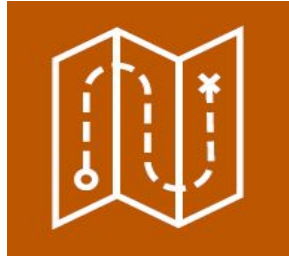
# Handout | The Trail Creation Process

The eight phases of the trail development process and the key activities within each phase:



## ASSESS

Assess the available land and terrain to determine if the site or sites are feasible for trail development



## PLAN

Conceptually plan the trail corridors



## DESIGN

Flag the trail corridors and create detailed design drawings and construction documents



## CONTRACT

Contract with a trail builder for the build



## BUILD

Build the trails



## PROMOTE

Promote the trails so people learn about them and can find them



## MAINTAIN

Maintain the trails to keep the conditions and user experience optimal



## EVOLVE

Evolve the trails to keep people engaged and coming back

SOURCE: Mountain Bike Trail Development Guidelines for Successfully Managing the Process, IMBA 2003



What is missing?

# The Process

Bringing a Trail to Life

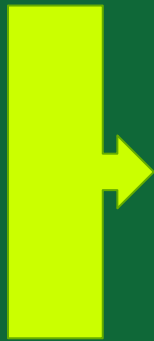
First...

Vision

Assess

Design

Project Prep



# Plan

Then...

Contract/Build



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# Vision

## Start with the Ending

### Goals & Vision

- Type of experiences
- Users (current & future)
- Sustainability
- Who is involved?



Articulated/Agreed upon  
trail project vision and goals

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# Data

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## What are you working with?

### Collect/Assess the Data

- Existing physical conditions
  - Topography, soils, streams, etc.
- Trail resources
  - Location, type, condition
- Sensitive areas
  - Natural, cultural
- Social
  - Local knowledge and stakeholder considerations



Zones of feasibility



# Design- Part I

Where is your vision feasible?

## Conceptual Design

- Accommodate identified target trail users, ability, experience
- Works with the natural and/or agreed upon constraints



Corridors of feasibility  
~ 50'-200'





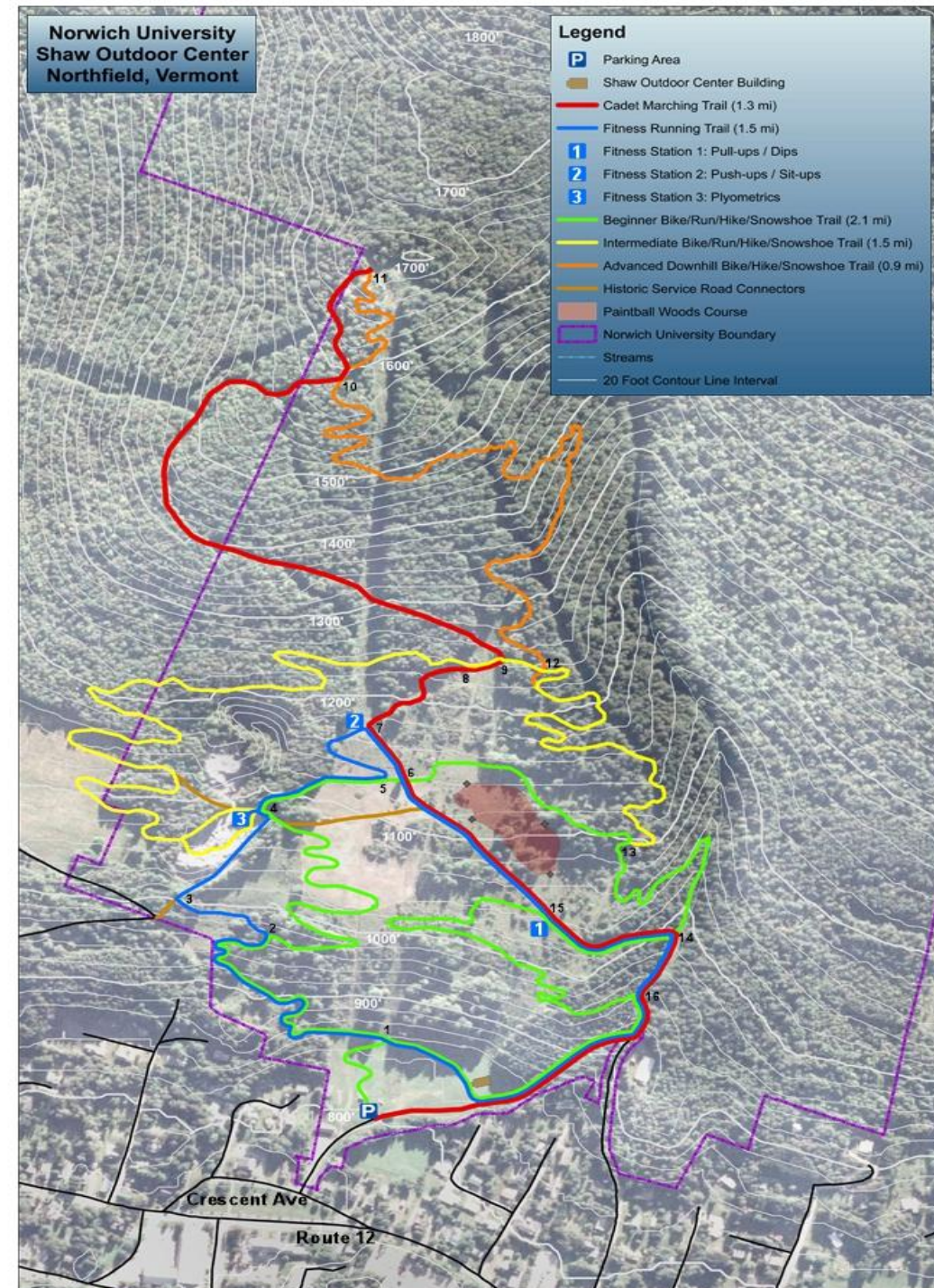
# Design - Part 2

Putting lines on a map... with meaning

- Field truth, adjust, and do it again
- Iterative Design Process:



➔ Flagged trail corridor ~5' (9)



# Project Prep

All the other stuff

- Permits/Environmental Review
- Maintenance
- Opinions of Probable Cost
- Design detailed drawings
- Funding



Compiled in Design Report



## BRIDGE CONSTRUCTION AND BIDDING NOTES

### PAYMENT NOTES:

PAYMENT FOR 104 LINEAR FEET OF BRIDGE AT 7 LOCATIONS ARE INCLUDED IN THE BASE BID.

PAYMENT FOR ADDITIONAL BRIDGES SHALL BE MADE ON A LINEAR FOOT BASIS.

1. TIMBERS USED FOR SILLS SHALL BE PRESSURE TREATED SOUTHERN YELLOW PINE OR MILLED BLACK LOCUST LUMBER.

2. TIMBERS FOR SILL SHALL BE SET IN A 3" DEEP BEDDING OF CRUSHED STONE, OR SET DIRECTLY ON SOLID BEDROCK/EDGE. WHEN SET ON LEDGE, SILLS SHALL BE SCRIBED TO LEDGE AND FASTENED WITH 5/8" STAINLESS STEEL THREADED ROD. RODS SHALL BE GROUTED USING ANCHORING CEMENT INTO A 7/8" DIAMETER HOLE A MINIMUM OF 6" DEEP. STAINLESS WASHERS AND NUTS SHALL BE USED TO SECURE ROD OVER SILL.

3. BEAMS USED FOR STRINGERS SHALL BE PRESSURE TREATED SOUTHERN YELLOW PINE, GRADE 1.

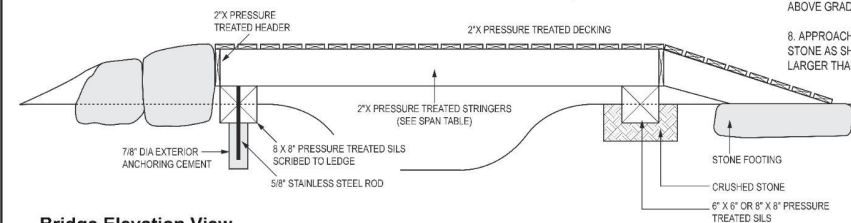
4. BOARDS USED FOR DECKING SHALL BE ROUGH-CUT BLACK LOCUST, AIR OR KILN DRIED, OR GREEN.

5. FASTENERS USED FOR ATTACHING DECKING SHALL BE GALVANIZED OR STAINLESS STEEL 3 1/2" DECK SCREWS OR APPROVED EQUAL. TWO FASTENERS ARE REQUIRED PER CONNECTION (6 PER BOARD).

6. STRINGERS SHALL BE FASTENED TO SILLS WITH SIMPSON STRONG TIE HL35 GALVANIZED ANGLE WITH 3/8" GALVANIZED HEX BOLTS AND LAG SCREWS.

7. DECK HEIGHT OF BRIDGES SHALL NEVER BE MORE THAN 30" ABOVE GRADE.

8. APPROACHES TO BRIDGE SHALL BE MADE FROM TIMBER OR STONE AS SHOWN ON THE DETAILS WITH NO TREAD OBSTACLE LARGER THAN 1".



Bridge Elevation View

Not To Scale

### SPAN TABLE

SPAN	STRINGER
6' - 0" TO 9' - 0"	2 X 8
>9' - 0" TO 12' - 0"	2 X 10
>12' - 0" TO 16' - 0"	2 X 12
>16' - 0" TO 18' - 0"	(2) 2 X 12
>18' - 0" TO 30' - 0"	STEEL W 6 X 15

2" X PRESSURE TREATED STRINGERS

# Framework | The Trail Creation Process



## VISION

Establish the goals and purpose of your project



## ASSESS

Assess the available land and terrain to determine if the site or sites are feasible for trail development



## PLAN

Conceptually plan the trail corridors



## DESIGN

Flag the trail corridors and create detailed design drawings and construction documents



## BUILD

Build the trails, potentially contracting with a professional



## PROMOTE

Promote the trails so people learn about them and can find them



## MAINTAIN

Maintain the trails to keep the conditions and user experience optimal



## EVOLVE

Evolve the trails to keep people engaged and coming back

## UNIQUE VERMONT CHALLENGES

- Terrain & Geology
- Land Ownership
- 'Legacy' Trails and Systems



WHY?

Which trail networks do you use the most?  
What do you do there?

WHY?

# What is Your Favorite Trail?

WHY?

Why do you love it?



WHY?

# Trail User Objectives

NATURE

ESCAPE

SOLITUDE

CHALLENGE

RISK

FUN

PLAY

EXERCISE

VARIETY

CONNECT

SOCIALIZE

SAFETY

SECURITY

INSPIRATION

DISCOVER

# Getting Started

# Trail Project Start-Up Worksheet

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## TRAIL PROJECT START-UP WORKSHEET

Goals and Vision

What are the goals/vision of this trail project?

Some things to consider:


- Is there a management or recreation plan already in place or other guiding management documents with goals/visions for the trail, parcel or network?
- How does it fit into or complement nearby or regional trail-based recreational opportunities?
- What experience will this trail or network provide, and to whom? What do/will they use them to do? And at what level?
- Where will users be coming from? How does this work with recreation in your town, region, etc.?
- If there are already vision and goals for the project are they **AGREED UPON** by the necessary stakeholders?

Trail User Check-List:

Check the boxes for (known) current trail users. Circle desired NEW trail users/uses.

Spring/Summer/Fall

- Hikers
- Walkers
- Bird Watchers
- Mountain Bikers
  - X-country
  - Flow
  - Technical
  - Advanced
  - Beginner
  - Intermediate



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- Skill Building
- Adaptive
- Other: \_\_\_\_\_


- Runners
- School Groups
- Elderly Groups
- Horseback riders
- Motorized uses
- Hunters
- Historic/Educational Walks, etc.
- Others: \_\_\_\_\_

Winter

- Snowshoers
- X-Country Skiing
- Motorized
- Fat Tire Biking
- Others: \_\_\_\_\_

Level of use/Trail Character

- Rustic/Wild (6-12")
- Heavy Use (2-4' wide, smooth)
- Challenging
- Quiet
- ABA
- Accessible, (not necessarily ABA)
- Intermediate Use (18-24" wide, stairs when needed, etc.)
- Other




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Goals:

Vision:

Agreed upon by necessary stakeholders? Y/N



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### Stakeholder Engagement

→ Who are the key Stakeholders for this project?  
→ Who else should be involved and considered? What is their interest/role?  
→ Who will support these trails and how?  
→ When and how should they be brought to the table? Public Forum for visioning/goal setting? Approval? Informational? Data gathering to inform planning?

- Local recreation clubs (bike, hike, run, other)
- Neighbors (adjacent and nearby)
- Local Business Owners
- Other local land managers
- Schools

Stakeholder	Interest


Are there any anticipated concerns/conflicts/barriers? Suggestions for mitigation?



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### Other Essential Considerations

- 1. Parking and Trailhead**  
Is there Existing Parking/Trailheads? Where? Does it work for the future vision?
- 2. Timeline**  
Timeline (budget times? Leaf out or Fall? Scheduled Timber Harvest?)
- 3. Funding Sources**
- 4. Maintenance**  
Who will maintain the trails?
- 5. Land Ownership**  
Are the boundaries clear/arked? Are all permissions granted? Easements?
- 6. Natural Resources**  
Are there any known special Resource Concerns?
  - Sensitive/endangered species
  - Listed wetlands
  - Historic/archaeological sites (or flat river or lake shores)
  - Habitat Considerations (bear, deer yard, etc.)
- 7. Spatial Data**  
Is there available spatial data on the property lines, existing trails, forest management or natural resource survey data? Who can share and when?





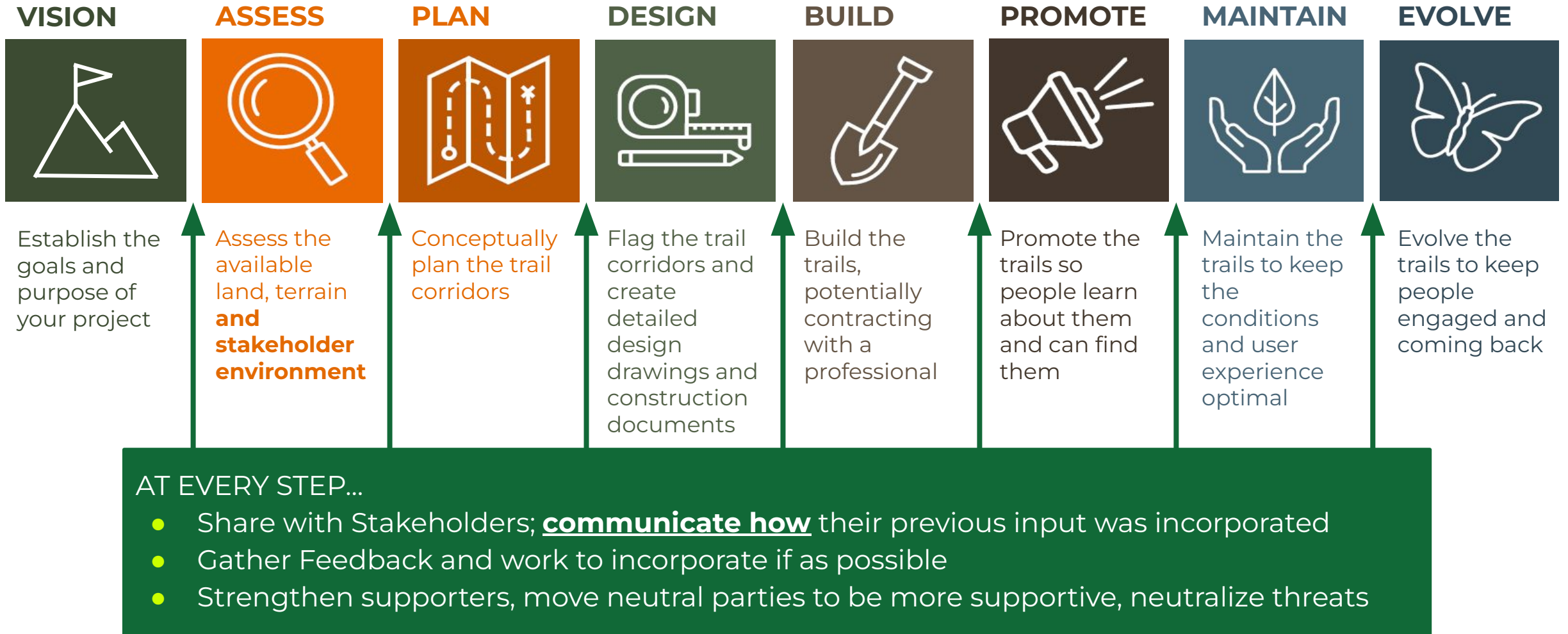
# The Human Touch

## Stakeholder Engagement

- Rationale
- Identifying Stakeholders, by Group
  - Partner
  - User
  - Community
- Determining Project Bias
  - Ally
  - Neutral
  - Challenge
- Coming up with a Plan
- Management & Maintenance



# Framework | The *Updated* Trail Creation Process



# Tool | Stakeholder Engagement Plan

ILLUSTRATIVE

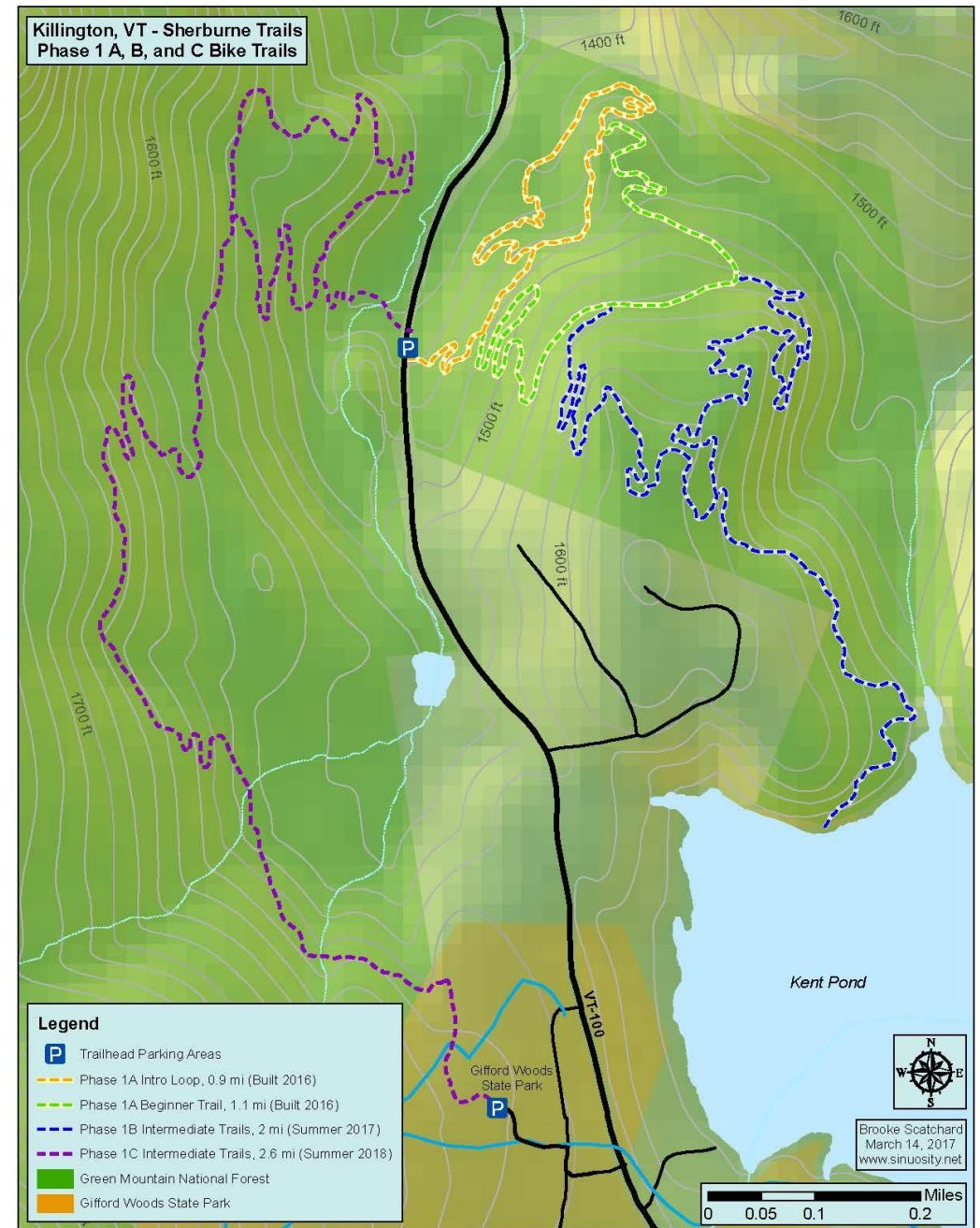
STAGE:	VISION	ASSESS	<b>PLAN</b>	DESIGN	BUILD	PROMOTE	MAINTAIN	EVOLVE
Stakeholder	Group	Prior Feedback	How Incorporated	Current Feedback				
Local Equestrian Club	Partner	Overlook in northeast corner would be valuable for all users	Conceptual equestrian and MTB corridors both reach overlook	Two conceptual intersections might be unsafe - examine				
Town Economic Development Director	Supporter	Would love to see parking near local general store	Main parking area identified ¼ mile from general store	Eager to add signage; discussing 'share the road' signs				
Abutter #1	Neutral	Would rather not see trail users from home	Corridors planned to avoid sight lines	Appreciative; would like to walk corridors				
Abbuter #2	Antagonist	Worried about unauthorized access through their land	Conceptual corridors are separated by a ravine from abutter's parcel	Now concerned about noise level of trail users				
...	...	...	...	...				

# Case Example

## Town of Killington

- Town Manager approaches Sinuosity with vision (2013)
- Engage stakeholders i.e. USFS, FPR, GMC, ATC, local MTB riders, neighbors
- USFS Approves Conceptual Design ~15 miles (2014)
- KMBC becomes official VMBA chapter (2015)
- Trail Corridor Design and NEPA Adjustments - Phase 1 (2015)
- Phase 1 Constructed (2016)
- ~ 8 new miles added, and ~6 connected to since

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# Case Example

## Lemon Gulch - Prineville Oregon

- USFS approached Ochoco Trails coalition in 2017
- 1990 Ochoco National Forest Mgmt. Plan calls for 300+ miles of trails
- Multi user-group coalition: hiking, equestrian, cycling trails proposed
- NEPA assessment indicated minimal negative environmental impact
- +75% positive public comments
- Project withdrawn by USFS in May '23

The screenshot shows the News Channel 21 website (ktvz.com) with a navigation bar including News, Weather, Fire Alert, Sports, Community, Contests, Share, Watch, and a temperature of 56°. Below the navigation is a "VIDEO FORECAST" section with a "LOCAL ALERT WEATHER" graphic for "AIR QUALITY" labeled "UNHEALTHY". A video player below shows a "Controversial trail plan is denied" video with a "LEMON GULCH PARKING LOTS" sign. The video player has a red play button and "Watch later" and "Share" options. Below the video player is an "Ad removed. Details" placeholder.

The screenshot shows the COTA website with a navigation bar including News, Volunteer, Trails, Chapters, About, Support Us, and Shop. The main content is an article titled "CANCELLED BY FOREST SERVICE" under a "Volunteer" sub-header. The article text reads: "The United States Forest Service made the decision to withdraw the Lemon Gulch Proposal from consideration, effectively blocking the project from proceeding. Additionally, the final Environmental Assessment was released, and can be found [here](#)." It continues: "COTA is extremely dismayed by the Forest Service's decision, especially considering ~75% of the public comments were in support of the project. Which is an enormous margin by today's standards. A few small interest groups ultimately capitulated the Forest Service and their decision making. Misinformation about the project, and its impacts, influenced opponents of the project in a completely misguided way. We fully support everyone having a voice, and being able to voice their concerns about new projects. What we will not stand for is the spread of misinformation and deception of the public." The article concludes: "There is a huge lack of non-motorized trail access in the Ochoco National Forest. The Forest Service's 1990 forest management plan calls for 468 miles of non-motorized trails on the 850,000-acre forest; there are only 156 miles of trails currently (33% of that goal). Of those 156 miles, mountain bikers can only access 112 miles. The Forest Service initially came to the Ochoco Trails coalition to come up with a plan to achieve this goal, with multiple stakeholders. Had it been completed, the Lemon Gulch trail system would have included trails for bikers, equestrians, and hikers, all in one area. The Forest Service's refusal to honor the recommendations of the Ochoco Trails coalition is a huge blow. The Environmental Assessment did not come back with any threats, and we encourage everyone to read through it themselves to make a proper judgement call." The final paragraph states: "The Lemon Gulch trail system was one piece of a master plan by the Ochoco Trails coalition to increase non-motorized access and relieve user conflict on existing trails. We hope to continue our partnership with the Forest Service and stakeholders to achieve these goals in the future."

# Wrap-up

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Quick round robin...

*What, if anything, will you do differently Monday (or Friday) morning?*





# THANK YOU!

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Nick Bennette; [nick@vmba.org](mailto:nick@vmba.org)

# Resources

## Where to go for more information

- General
  - VTGC Manual
  - VTCF Town Forest Toolkit
  - AT Trail Planning & Design Hub
- Use-specific (examples)
  - AMC Complete Guide to Trail Building & Maintenance
  - Best Practices for the Development of Snowmobile trails (VAST)
  - IMBA Trail Solutions & Managing Mountain Biking
  - Vermont Backcountry Ski Handbook

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