



NORTHFIELD TOWN FOREST ACCESS FEASIBILITY STUDY

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Introduction

Following the successful completion of the Northfield Ridge + River Routes Master Plan, completed in 2020 via a Better Connections grant, The Town of Northfield is moving forward with a feasibility study to improve public access for residents of Northfield to the Town Forest.

This plan, funded by the Central Vermont Regional Planning Commission, builds upon prior planning efforts in the Town and follows a robust public engagement process to review various alternatives before investing further in any particular proposal.

Methodology

Public Engagement

This study included multiple avenues for public engagement, including:

- a virtual community forum,
- three site walks,
- two online surveys,
- and a website.

These targeted public outreach efforts sought to solicit community concerns, particularly from residents who would be most impacted by improvements, and to gain understanding of issues facing community residents in regards to public access to town lands.

Feasibility

The study utilized GIS-level information and site investigations to determine site opportunities and constraints to building access improvements. These constraints include, but are not limited to, steep side slopes, private property boundaries, subsurface and aboveground utilities, vegetation, and neighboring landowner concerns.

Alternatives

Alternative concepts for site development were presented and narrowed down to the three that would be investigated in more detail and presented in full to the Town of Northfield.

Project Area and Background

This study focuses on project areas in the residential neighborhood adjacent to the Village Center and at the foot Paine Mountain. This area includes Prospect Street, Elm Street, Slate Avenue, Highland Avenue, and Byam Hill Road, as well as the unmaintained access road to Cheney Field. Forest access points are at the uphill end of Slate Avenue and Byam Hill Road.

Purpose & Need

Purpose

The purpose of this study is to identify opportunities and constraints present when considering improvements in forest access for the Town of Northfield. This study will help shape future efforts by identifying areas where access is infeasible and others that hold the most promise for improving public access to the Town Forest.

Forest Access Improvements are often perceived as expanding parking spaces by trailheads. This is only one type of forest access improvement, as others include wayfinding improvements, trailhead kiosks and markers, improved trail markings, online resources, and parking improvements. It is a goal of this study to identify opportunities for parking access to be developed in a dispersed, rather than concentrated manner, to reduce overall environmental, community, and cost impacts.

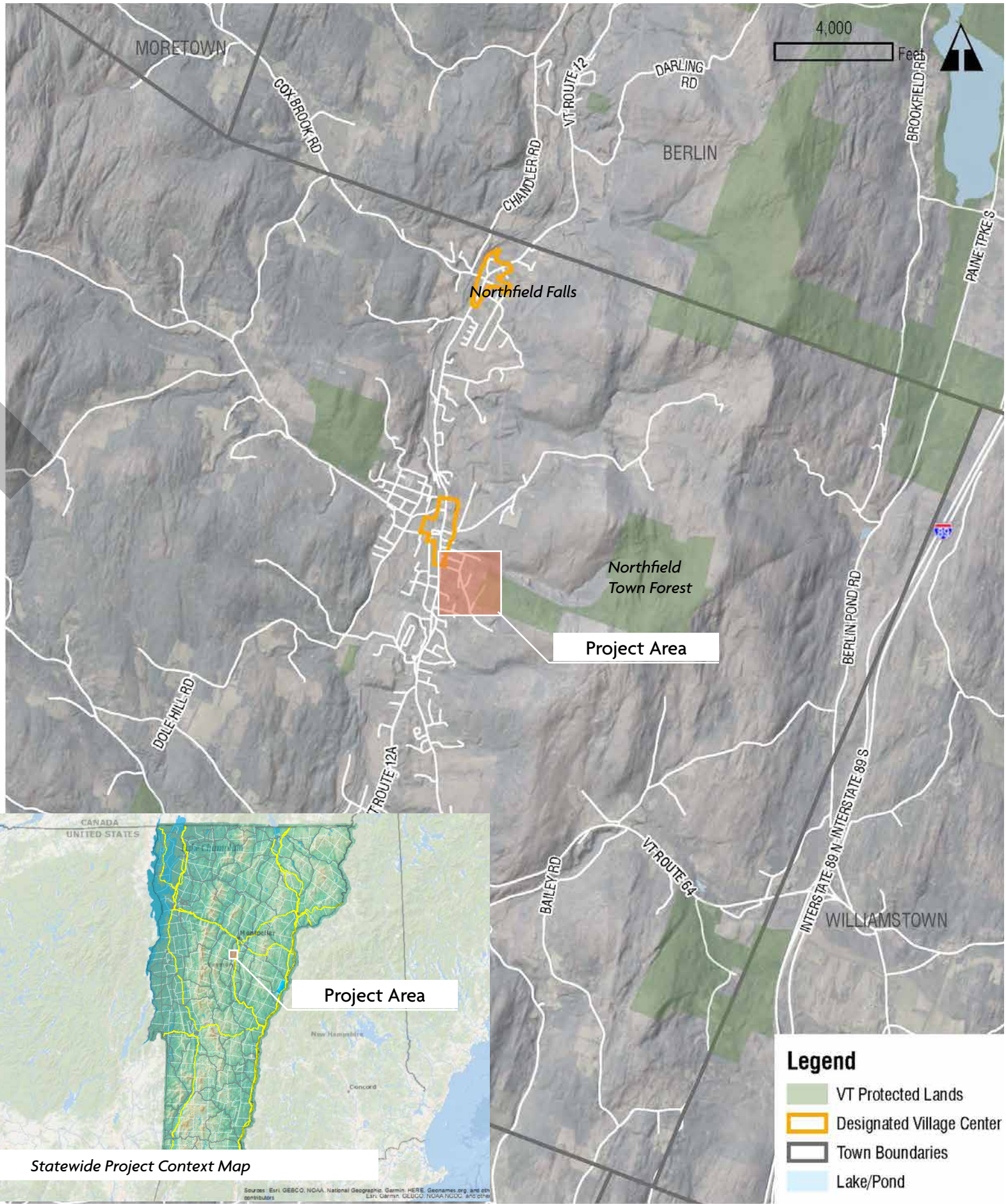
Due to the Forest's sensitive ecology, mountainous terrain and location behind central residential neighborhoods located at the foot of the mountain, this study is intended to propose access improvements that respond equally to neighborhood concerns and constrained site conditions.

Need

The Northfield Town Forest on Paine Mountain is the largest public land holding owned and operated by the Town of Northfield. It is a treasure to many, but a large number of residents are either unaware of its existence, or unable to access it due to the lack of formal access.

There are no parking areas designated as forest access parking on public right of way. Four designated parking spaces rely on goodwill from the privately-operated Green Mountain Family Practice Health Center. The nearest public roadways dead end at private property boundaries.

These improvements are needed to allow a broader cross section of the community to access their outdoor recreation resources, but must be developed in such a way that they do not create significant impacts for the residential communities surrounding the existing Town Forest access points.



Utilities

- River Corridors (effective 7.2011)

Flood Hazard Areas (Only FEMA-digitized data)

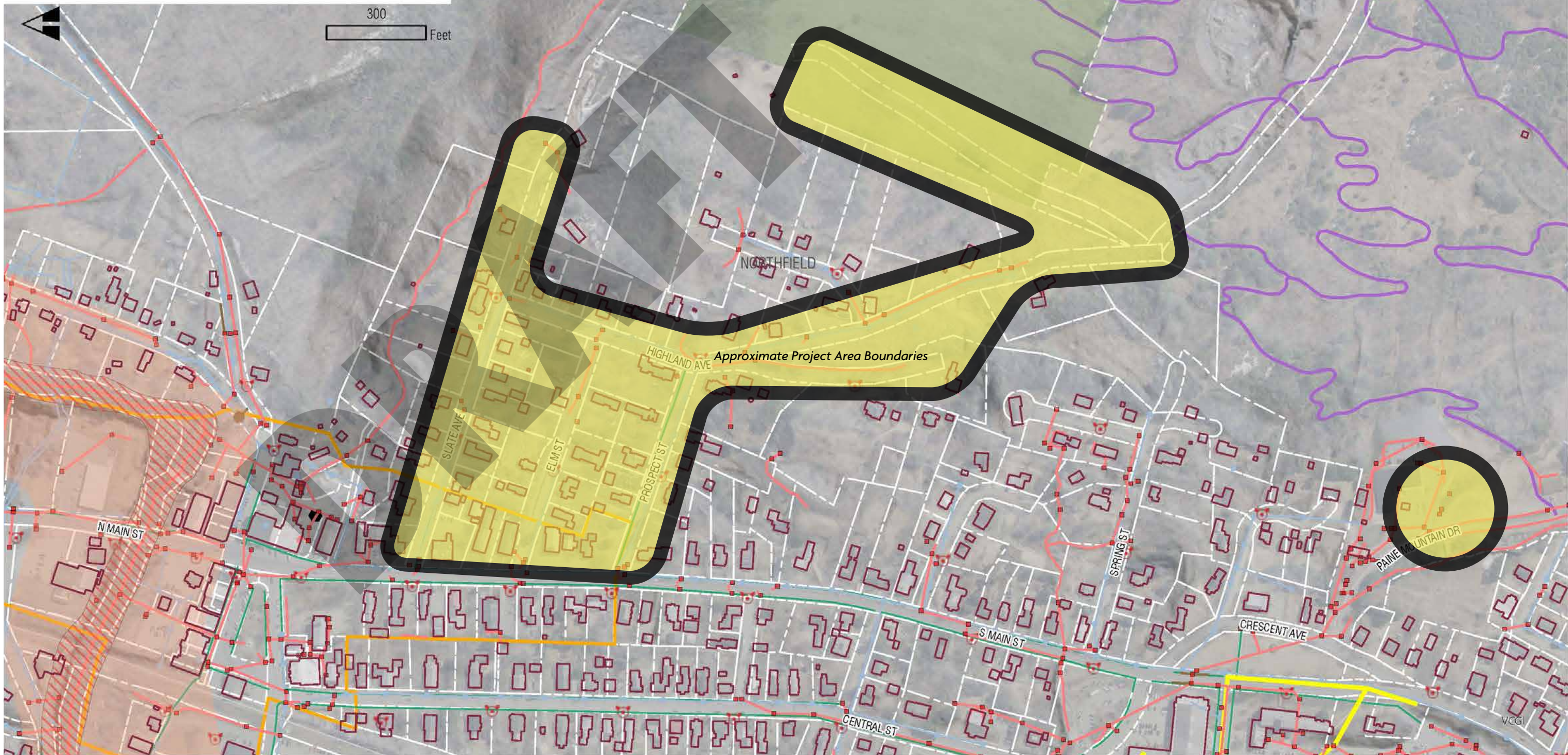
- AE (1-percent annual chance floodplains with elevations)
- VT Protected Lands

Stormwater

- Inlets
- Abandoned
- Storm Lines
- Abandoned
- Hydrants

Power and Telecom

- VT 3-Phase-Power (Generalized) for Planning
- GMP Overhead Lines
- GMP Poles
- VT Telecommunication Facilities
- Rail Lines
- Designated Village Center
- Parcels
- Town Boundaries
- Trails
- buildings
- Sidewalks





Existing Conditions



Roadway Characteristics

Road Widths

Slate Avenue, Elm Street, and Prospect Street are all approximately 20 feet wide. Highland Avenue varies between 18-24 feet wide. Byam Hill Road is approximately 18 feet wide. Per Northfield Town Ordinance, parallel parking is permitted on these roads.

Based on current Vermont Center for Geographic Information parcel data, right of way distances on these roadways appear to be the standard 49.5 (3 rod) width. Additional survey would be required to determine if and where this 3 rod standard changes in these neighborhoods.

Active Transportation Connections

There are pedestrian facilities that connect neighborhood streets to downtown, but they do not compose a complete network.

Prospect Street has sidewalk on the north side of the road, but it is in very poor condition. Slate Avenue has sidewalk on one side, from Main Street to the end of the post office property. A 2021 repaving of Slate Avenue removed additional sidewalks on that street. There are sidewalks on both sides of Main Street from the intersection with Depot Square and East Street.

There are no designated bicycle facilities in the area, other than bike racks located in front of various downtown businesses.

Once in the Slate Avenue Neighborhood, most people walking or biking share the road with local motor vehicle traffic.

Existing Parking Supply

Currently, Northfield Town Forest parking is available in two major areas: The Downtown Commercial Core, and a supply of allowed on-street parking.

Parallel parking is permitted along the east side of Main Street. Spaces shown in the image at the right run from north of Slate Avenue to south of Prospect Street.

There are several small parking lots associated with businesses and civic buildings, including the Brown Public Library and the Northfield Historical Society, and adjacent to the businesses at the intersection of Main Street and East Street. The largest parking area is on all sides of Depot Square, followed by the lot between (former) China Star and the Dog River.

Currently, many visitors to the Town Forest will park as close as possible, creating conflicts at the summit of Byam Hill Road and Slate Avenue, as these dead end streets are not designed to accommodate visitor parking or turnarounds.

Approximate Designated Downtown Parking Spaces:

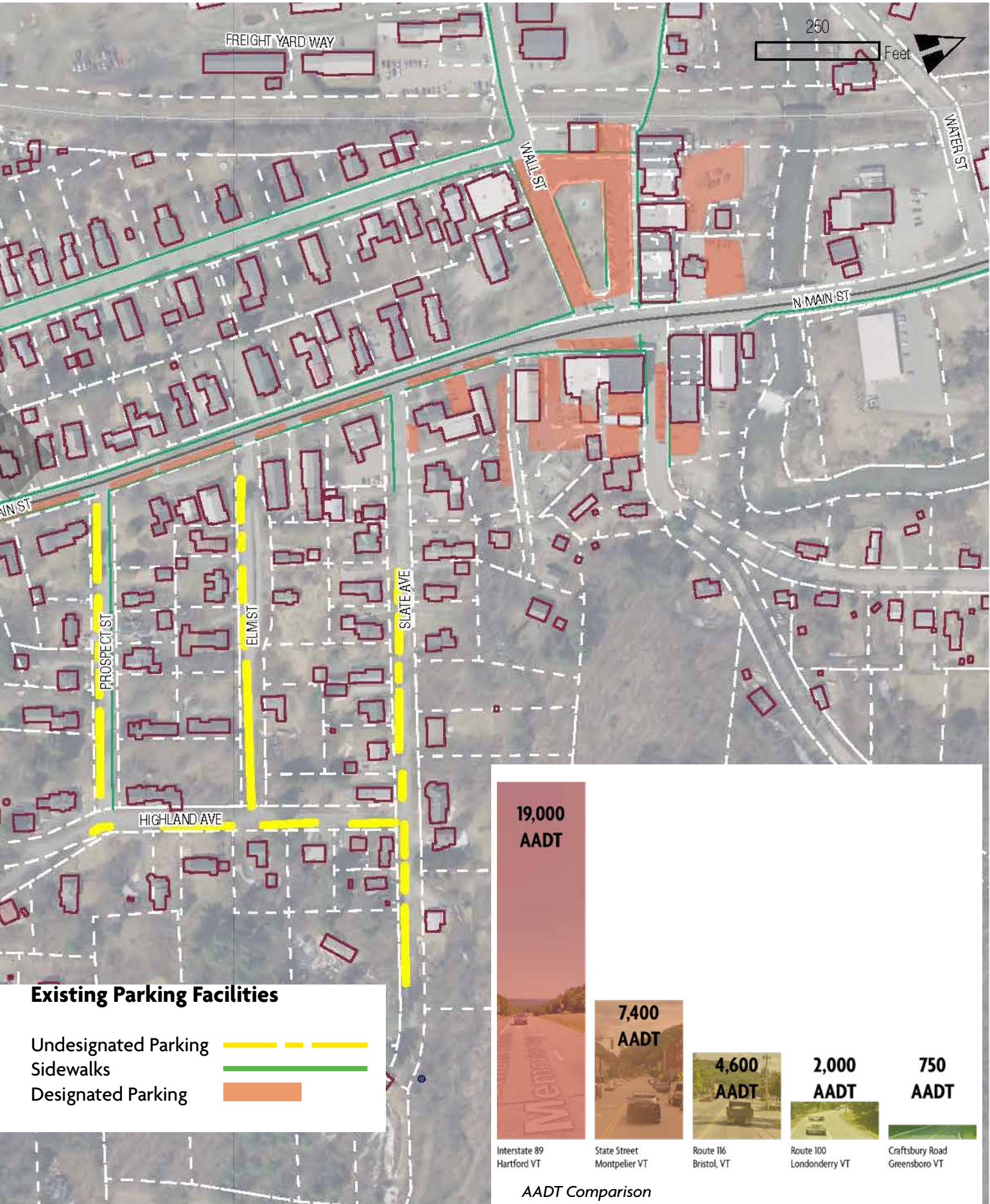
- Depot Square: 96
- Dog River: 12
- Library: 6
- Historical Society: 7
- East Street: 48
- Mayo Building: 22
- Main Street (Kent Street to South Street): 40
- Northfield Savings Bank: 13
- Town Clerk: 7
- Rear of Hardware: 18

Approximate Undesignated Neighborhood Parking Spaces:

- Prospect Street: 21
- Elm Street: 24
- Slate Avenue: 30
- Highland Avenue: 18

Traffic Counts

The Annual Average Daily Traffic count (AADT) for VT-12 is 4,900, which is typical for similar-sized towns and state highways. Site observation points to much lower traffic counts on local streets, as also is typical for dead-end residential streets.



Roadway Characteristics

The following images illustrate the characteristics of the roads within the project area, including Slate Avenue, Elm Street, Prospect Street, Highland Avenue, and Byam Hill.



Slate Avenue - east



Highland Avenue - north



Elm Street - west



Byam Hill - south



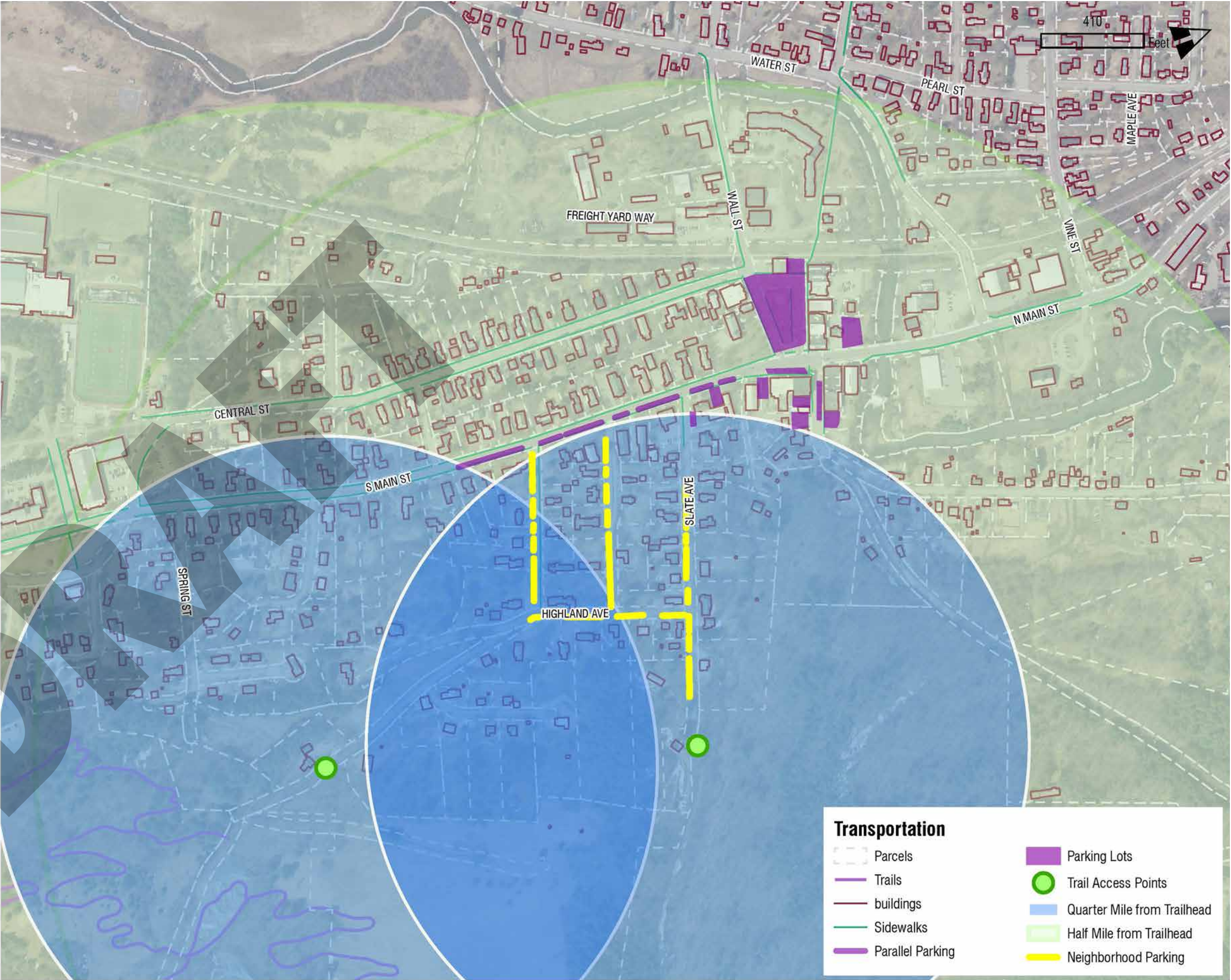
Prospect Street - east

Distance from Trail Access

This graphic illustrates the distance from the Trail Access at Byam Hill Road and Slate Avenue to various parking areas within Northfield, within a quarter-mile and a half-mile radius.

As shown on the next page, both Trail Access points are located at high elevations (957' at Byam Hill Road and 871' at Slate Avenue) and require navigating a 10.5% slope to reach them.

The elevation differences between Depot Square and the Byam Hill Road and Slate Avenue Trail Access are 223 vertical feet and 167 vertical feet respectively.



Slopes

Slope Impact

In terms of project cost and feasibility for any trail access improvement that could accommodate regular vehicular use, steep slopes are a key driver of project feasibility. The relative cost and engineering challenges associated with building retaining walls and excavating steep slopes can be enough to make hillside projects cost-prohibitive, but a similar project on flat ground would easily be attainable.

Slopes in Project Area

This map shows contour lines in the project area, surrounding streets and Trail Access.

Areas of gentler slopes are highlighted in the pink ovals at right.

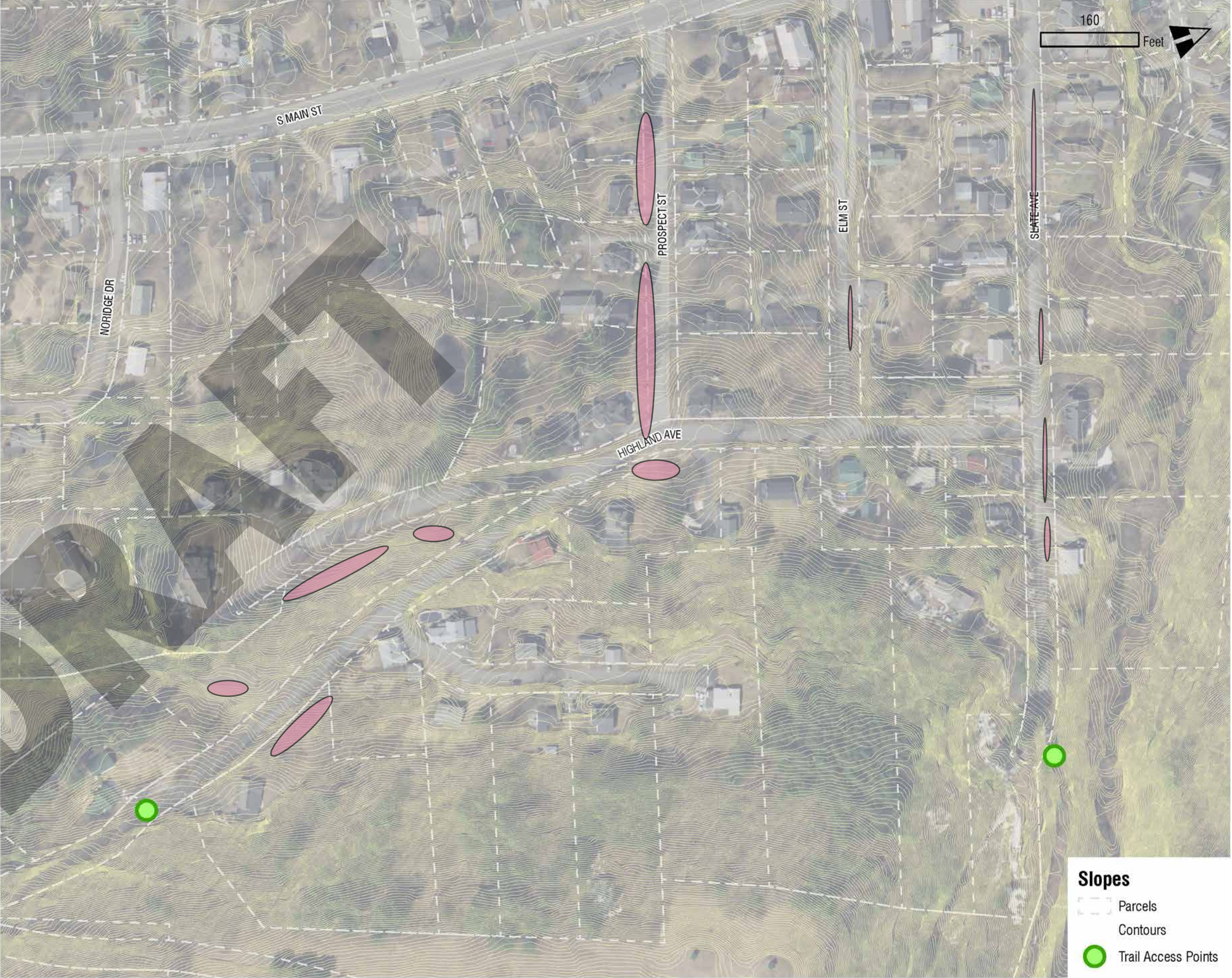
The elevation at the Byam Hill Road Trail Access is 957'. From the intersection at Highland Avenue, the length of the road is approximately 1,035 LF with a 10.5% average slope.

The elevation at the Slate Avenue Trail Access is 871'. From the intersection at Highland Avenue, the length of the road is approximately 510 LF with a 10.5% average slope.

Average slopes of neighborhood streets:

- Prospect Street: 8%
- Elm Street: 7%
- Slate Avenue (Main to Highland): 5.2%
- Highland Avenue (Byam Hill Road to Slate Avenue): 5%

An “accessible route” is defined as a surface not exceeding 5%. The maximum slope allowed for handicap ramps per the ADA (Americans with Disabilities Act) is 8.33%.



Slopes

- Parcels
- Contours
- Trail Access Points
- Low Slope Areas

Slopes

The following images illustrate the variety of slopes within the project area, along the streets and at the trail access points.



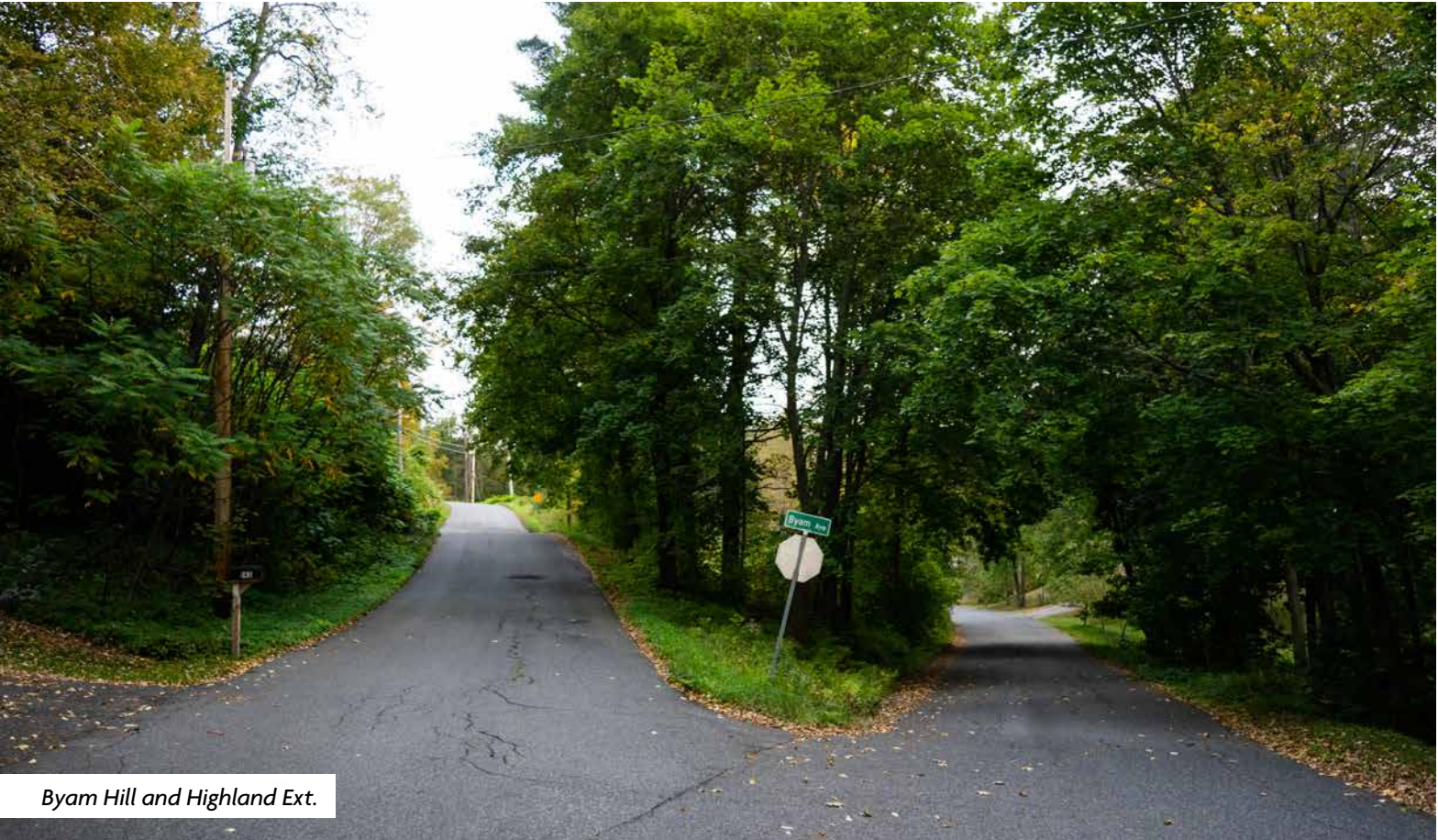
Slate Ave. looking down-slope nearing trailhead



Downhill slope on the east side of Byam Hill towards Highland Ext.



Facing downhill on Slate Ave. towards Main St.



Byam Hill and Highland Ext.

Existing Utilities

Relocating utilities to accommodate access increases the cost of any project.

This map illustrates major public utilities in the project area, including stormdrains and inlets, fire hydrants, and overhead power lines. Data for water, sewer, and gas lines are not available.

Slate Avenue:

- Overhead lines along extents of road.
- Hydrants on the north and the south sides of the street.
- Stormdrains at various intervals along the road.

Elm Street:

- Overhead lines along south side of street.
- Hydrant on south side.
- Stormdrains along eastern half to Highland Avenue.

Prospect Street:

- Overhead lines from Main Street to Highland Avenue; south side of street.
- Hydrant on south side.
- Stormdrains at intersections with Main Street and Highland Avenue.

Highland Avenue:

- Overhead lines and hydrants along east side.
- Stormdrains at various intervals.

Byam Hill Road:

- Overhead lines along extents of road; east side.
- Stormdrains along various intervals and from Hill Road to trailhead.



Existing Utilities

The following images illustrate some of the typical utilities within and adjacent to the project area, including overhead lines, stormdrain inlets, and fire hydrants.



Overhead lines at top of Slate Ave.



Overhead lines/poles along Byam Hill



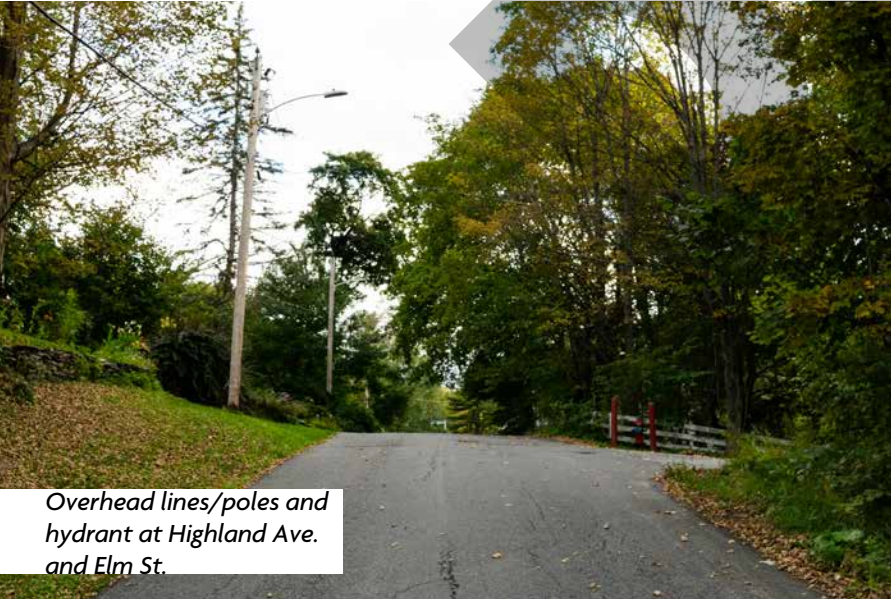
Inlet, overhead poles and hydrant at Slate Ave. and Highland Ave.



Hydrant along north side of Slate Ave.



Overhead lines/pole and hydrant at Prospect St. and Highland Ave.



Overhead lines/poles and hydrant at Highland Ave. and Elm St.



Overhead lines/poles and hydrant on Elm St.



Overhead lines/poles along Prospect St.

Existing Recreation Areas

Northfield boasts significant public recreation resources. The town and Norwich University are the primary owners of publicly utilized recreation land. Town-owned recreation areas include Northfield Falls Community Playground, Dog River Park, Memorial Park, the trails behind the Elementary School, and the Northfield Town Forest. At 400 acres, the Town Forest is the largest town-owned parcel and it is abutted by Norwich University land, including the Shaw Outdoor Center. It is located just to the west of the summit of Paine Mountain. There is no signage regarding the Town Forest at any of the access points.

Land Ownership

Currently, the majority of the existing access points to the Town Forest are through Norwich University land, including trailheads at Slate Avenue, the Shaw Outdoor Center, and Kingston Road. The rest of the Town Forest abuts private landowner property. Due to COVID19 in 2020, Norwich temporarily closed access to the public at the Shaw Outdoor Center.



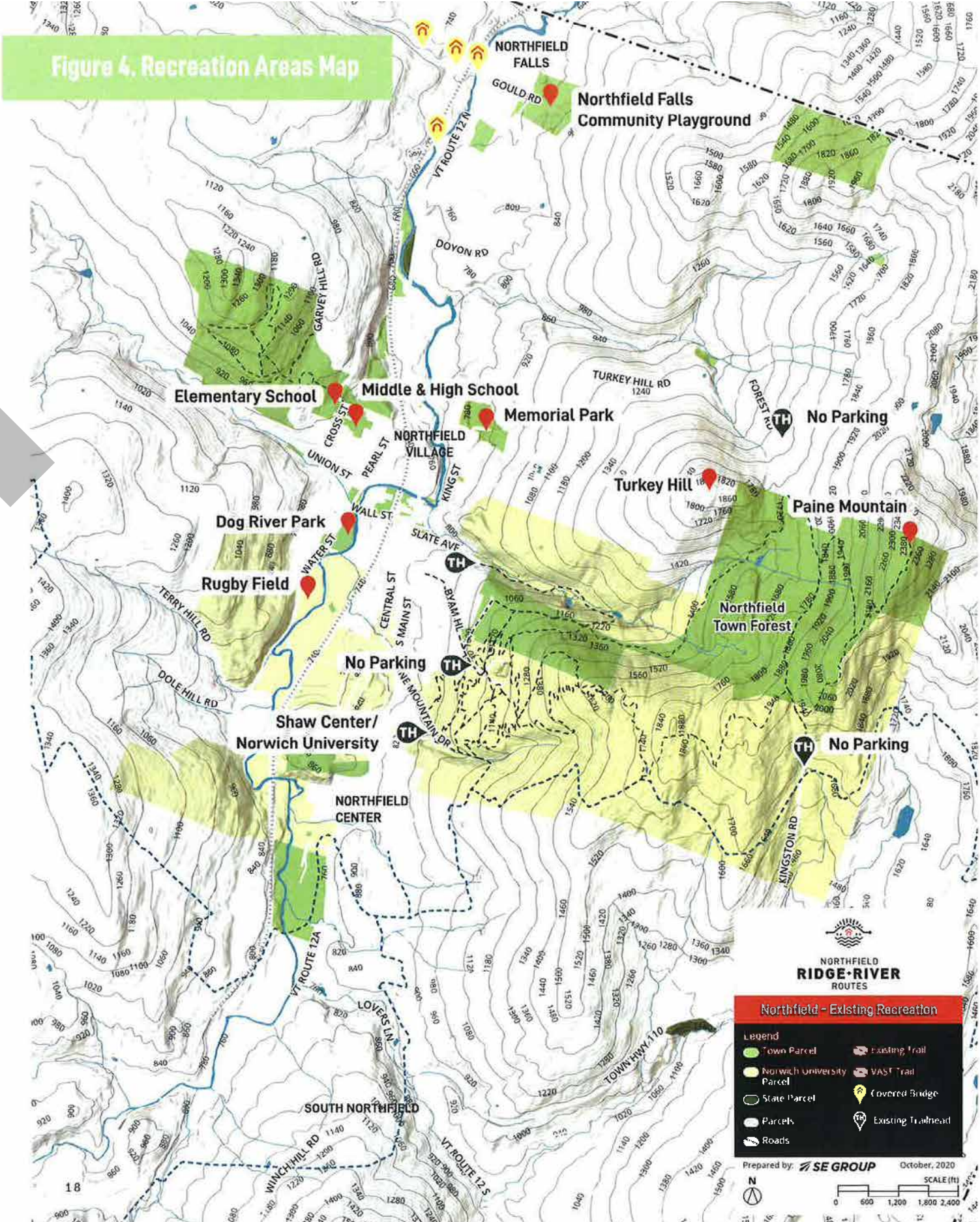
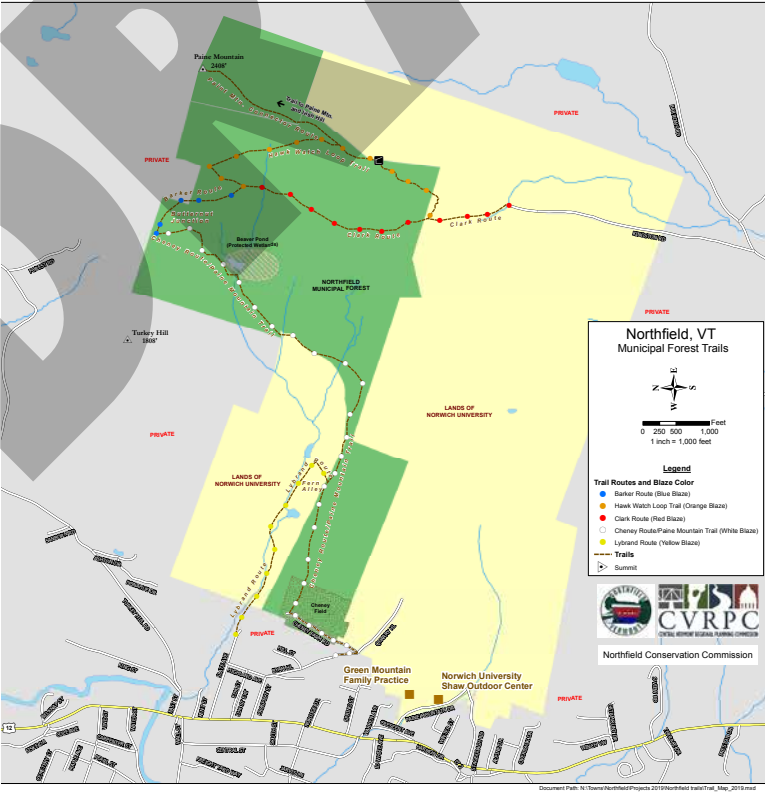
Dog River Park - photo c/o Times Argus



Shaw Outdoor Center



Town Forest signs at Cheney Field



Environmental Resources

The following table describes the natural resources in and around the project area and the Northfield Town Forest.

Street trees are abundant throughout the project area and are located primarily on private property.

Table -1 - Natural Resource Survey	
Potential Resources	Presence/Absence in Study Area
Wetlands	None in Study Area; 3.91 ac. Beaver Wetland and 10 seepage wetlands (1.30 ac.), 1.15 ac. alder swamp, 3 vernal pools in Town Forest.
Lakes/Ponds/Streams/Rivers	The Dog River is approximately 1/2 mile from each of the trailheads. A small stream runs to the north of and parallel to Slate Avenue, outflowing into the Dog River. Two headwater streams within the Town Forest feed into this unnamed stream.
Floodplains	Floodplains are restricted to the banks of the Dog River, running through downtown Northfield. There are none within the Study Area.
Endangered Species	None in Study Area. Known presence of state-threatened male fern (<i>Dryopteris filix-mas</i>).
Flora/Fauna	Signs of black bear habitat documented throughout the Forest; limited areas noted for white-tailed deer wintering habitat; songbird habitat includes grass land, early successional, and interior forest.
Stormwater	Storm drains and inlets throughout project site. Stormwater improvements were completed in mid 2021 on Slate Avenue and are proposed for Elm, Prospect, and Hill streets.
Forest Land	Northfield Town Forest and Norwich University property. Majority of Town Forest consists of Northern Hardwood Forest, with Hemlock, Hemlock-Northern Hardwood, Rich Northern Hardwood, Red Spruce-Northern Hardwood forests and Conifer Plantation contributing to the rest of the Forest composition.
Invasive Species	Relatively low quantities of honeysuckle (<i>Lonicera</i> spp.), barberry (<i>Berberis</i> spp.), and buckthorn (<i>Rhamnus</i> spp.) within the Town Forest.

Source: Vermont ANR Atlas, Northfield Town Forest Stewardship Plan 2019



A photograph of a group of people walking away from the camera on a dirt path through a dense forest. The path is covered in fallen leaves and leads into the distance. The forest is lush with green trees and foliage. On the left side of the image, there is a decorative graphic consisting of several horizontal bars in different colors (olive green, purple, blue, orange, green, yellow) of varying lengths. Overlaid on this graphic and the forest background is the text "Public Engagement" in a large, white, sans-serif font.

Public Engagement

Engagement Efforts

This Feasibility Study began with four public engagement events held throughout September 2021. These public events, promoted by the Town of Northfield, Central Vermont Regional Planning Commission, the Northfield Ridge Rivers and Routes Commission, as well as the Northfield Town Forest Stewardship Committee were attended by at least 36 individuals from the Slate Avenue neighborhood, Northfield, and Northfield Falls.

These 2021 events included:

- Community Site Walk, 6pm Wednesday September 8th
- Community Forum (Live and Virtual Options) 6pm, Thursday September 14th,
- Community Site Walk, 9:30am, Sunday September 19th
- Community Site Walk, 6pm, Thursday September 23rd

The events were purposely staggered to different days and times of the week in an effort to provide varied opportunities for participation from the community.

In addition to these engagement opportunities, a public survey was developed at the onset of the project to better gauge the community reaction to various types of public forest access sites.

A project web page was developed by CVRPC and remained available for the duration of the study:
<https://centralvtplanning.org/northfield-town-forest-access-feasibility-study-information/>

A summary of these conversations is included in this chapter, with a full table of public comments included in the appendix of this document.

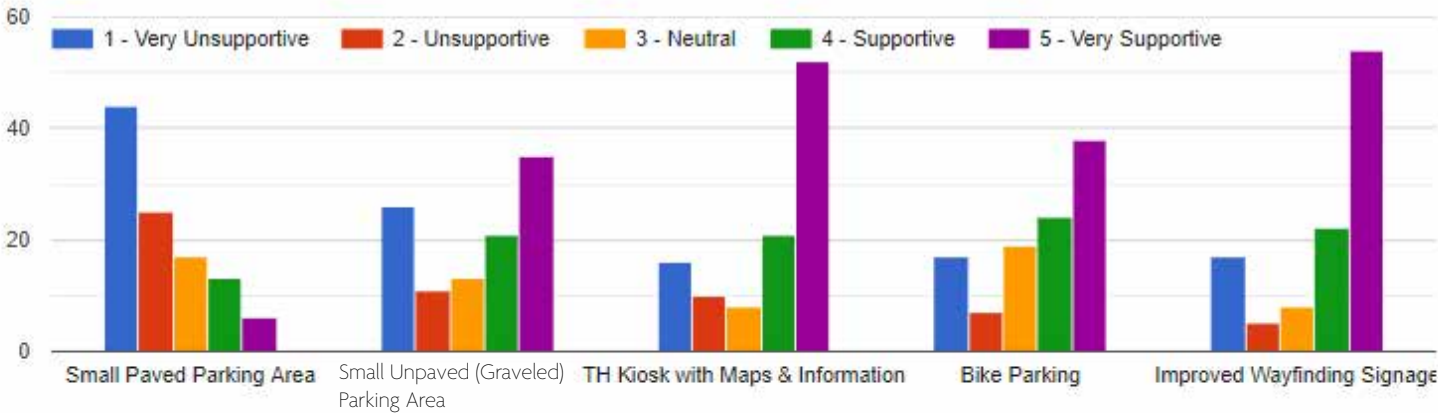
Engagement Themes

The Community members who were involved with this study’s public engagement events are all passionate about the value of the Town Forest.

The charts at right summarizes some of the key engagement elements heard throughout the process. Some of the most oft-repeated themes included:

- Don’t build parking lots
- We want this access improved for our community, not for tourism
- Right now, no one understands where the trails are, and where you are or aren’t allowed to go
- Allowed parking locations are unclear
- There is a need for improved wayfinding
- Neighborhood residents shouldn’t have to bear the impacts of more people coming into the forest
- Improvements should be small and subtle
- Improvements must go along with better wayfinding signage across the community
- Do not develop any access improvements into Cheney Field
- Downtown would be a good site to direct people to park before coming up the mountain
- It is strenuous for older residents and young families to walk from town to the trailheads

How supportive are you of the following elements in any future forest access sites?

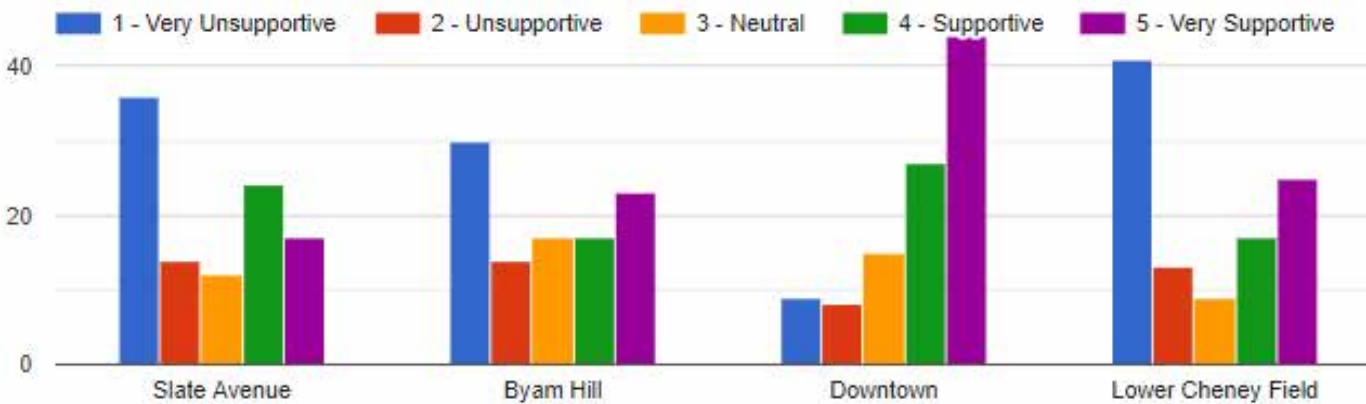


Would you be more in favor of Northfield Forest Access developed as:

83 responses

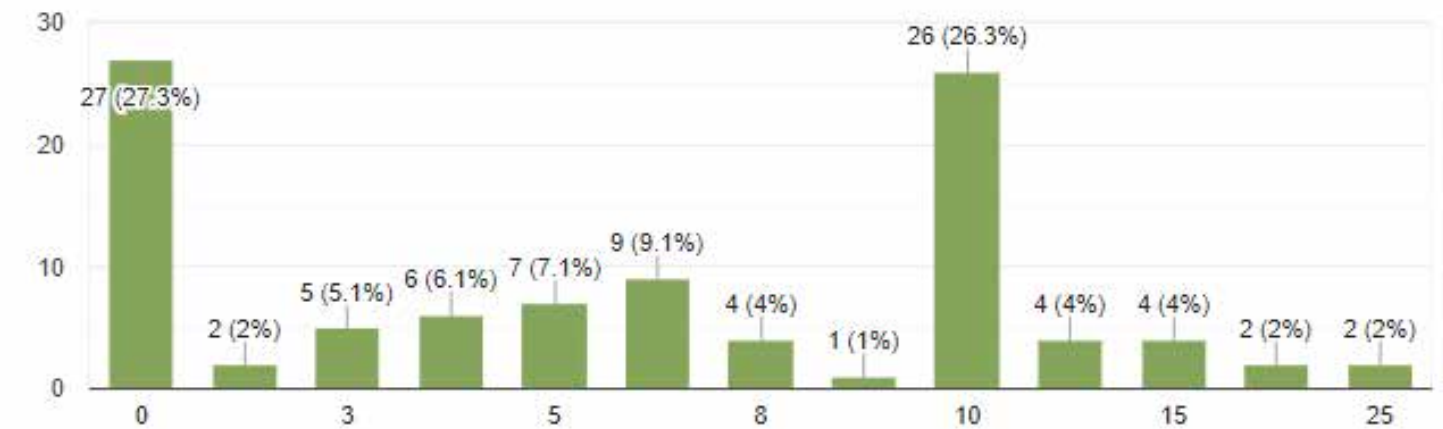


How supportive are you of any type of parking access points at the following locations?

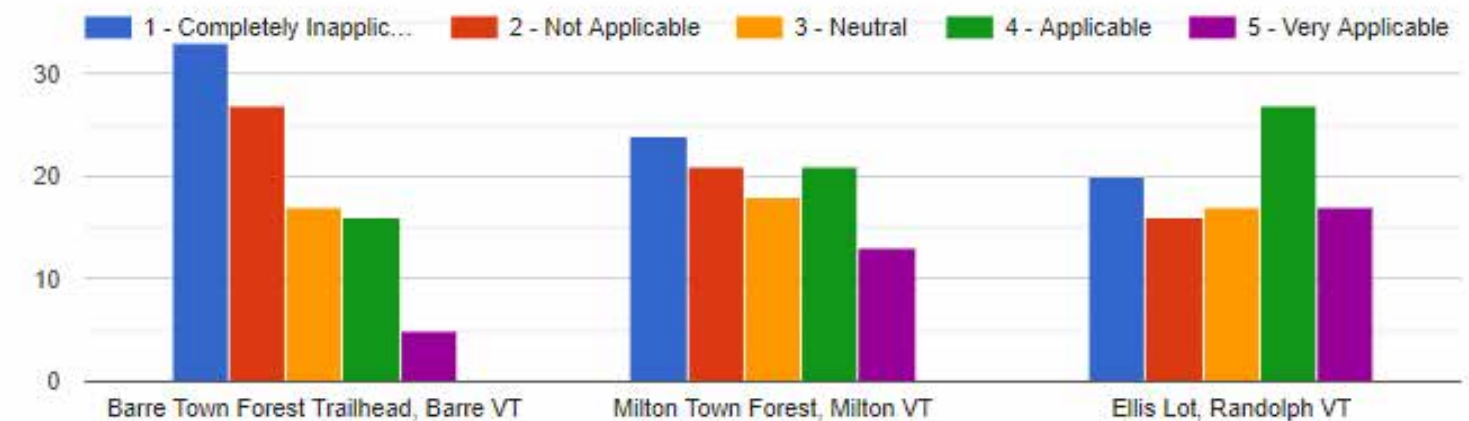


How many spaces would an ideal Northfield Town Forest Access Site have? (Please enter a number only)

99 responses



How applicable are each of the following Trailheads as models for any future Northfield Forest Access site?



A second round of public engagement occurred during the alternatives process and is described on page 35.

Online Survey Results

109 people took the online survey developed as part of this study. Key themes to emerge from survey questions and open ended responses are:

- Wayfinding and better Forest maps are needed.
- Forest parking access should be developed in a decentralized fashion.
- Small, unpaved access points are better than larger, paved ones.
- Lower Cheney Field has strong opposition to development as a forest access point.
- Downtown has significant support as a forest access site.
- There is already adequate access.
- If you're not "in the know" it's hard to access the Forest.
- A vocal minority of responders want to see no change at all.

A person wearing a red and white striped shirt, green shorts, and a red helmet is riding a mountain bike through a forest. The rider is seen from behind, moving along a dirt path. The forest is dense with green trees and foliage. The word "Alternatives" is overlaid in white text on the left side of the image, with a red horizontal bar to its left.

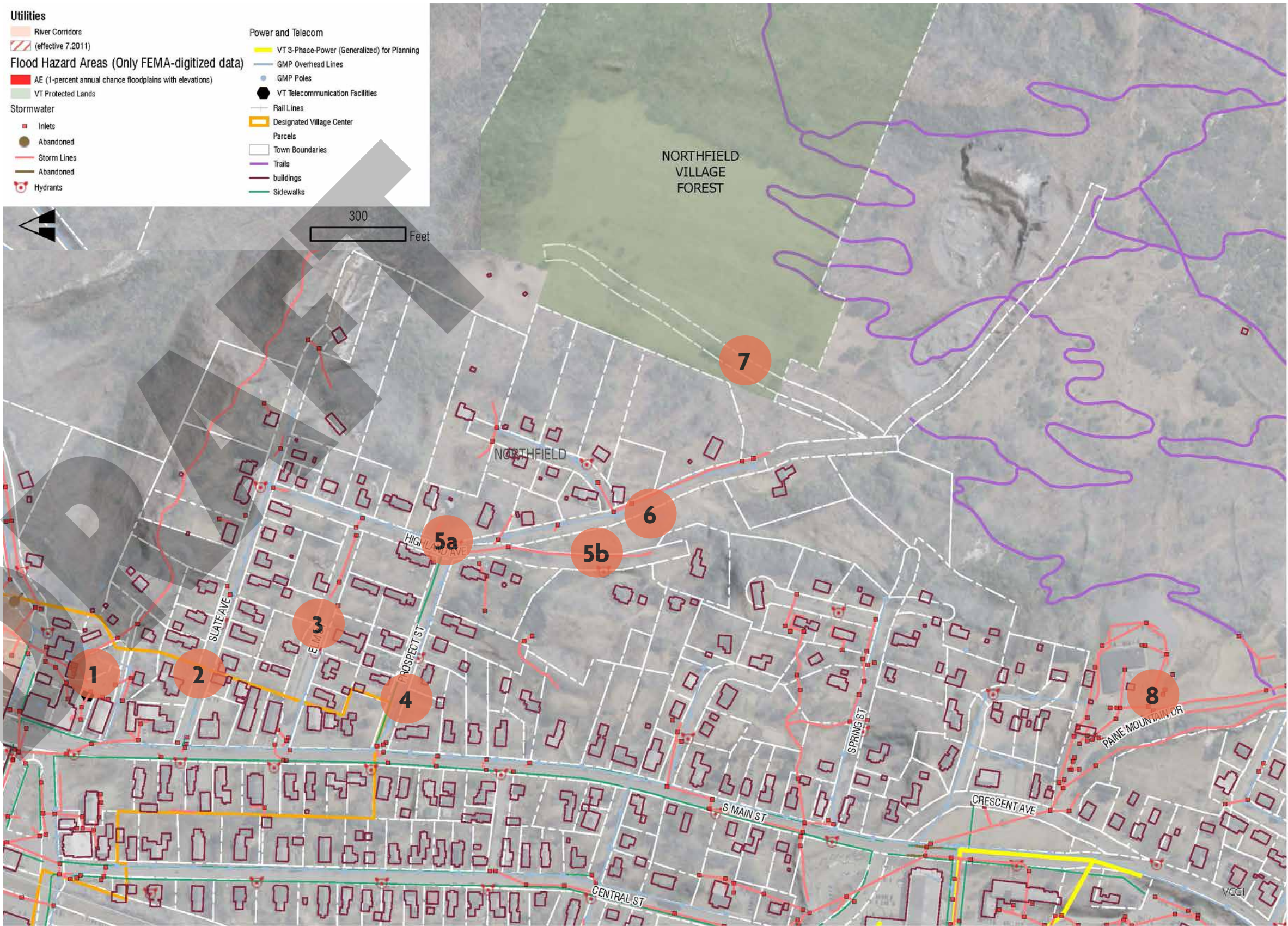
Alternatives

Reviewed Access Alternatives

Many potential alternatives were reviewed as part of this study. This page provides an overview of considered alternatives. This list of potential sites was reduced to three sites for further development and public review as part of this study.

The following pages discuss the entire list of alternatives initially considered as part of the study. The mapped areas are for reference purposes only and do not represent exact boundaries.

- 1. Downtown Access Area
- 2. Slate Ave. On Street Parking
- 3. Elm St. On Street Parking
- 4. Prospect Ave. On Street Parking
- 5a. Highland Ave. Parking Access Area A
- 5b. Highland Ave. Parking Access Area B
- 6. Byam Hill Parking Access Area
- 7. Lower Cheney Field Access Area
- 8. Shaw Center Access Area



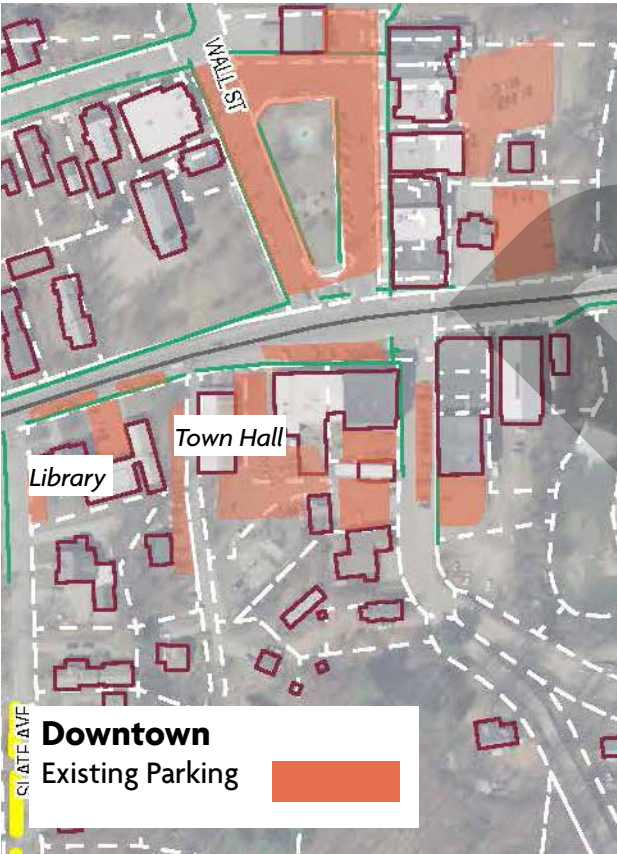
1. Downtown Access Area

Downtown Northfield is located within a reasonable distance of forest access points. This distance is perhaps more accessible to the mountain biking or trail running population than the hiking population or those with small children.

Downtown has a significant supply of parking that could be identified as de-facto forest access provided there is sufficient wayfinding between the Downtown and Forest Access points. The development of these access points is more a question of wayfinding design than building parking supply.

Approximate Parking Supply: 200-250 vehicles in existing lots.

Estimated Cost: \$ (wayfinding only)

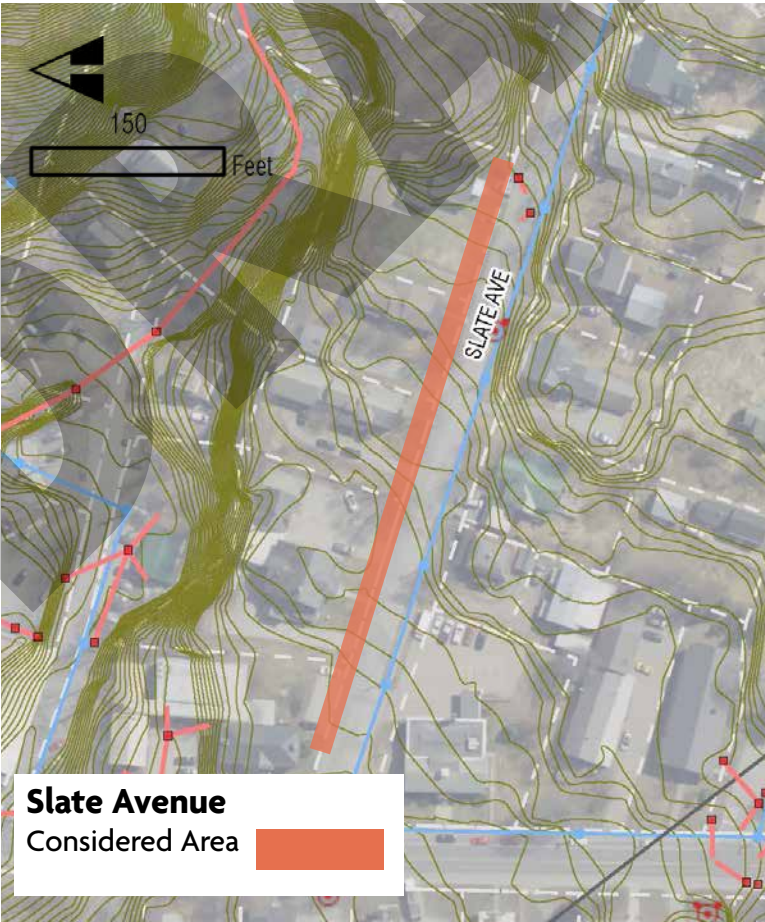


2. Slate Avenue On-Street Parking

Recently subject of a repaving project, Slate Ave. below Highland has lower side slopes on the northern side of the roadway. In addition, this side of the roadway avoids the utility impacts that would be associated with the western side. Parallel parking would reduce travel lanes to one direction at a time. This alternative could consider expansion of the roadway to accommodate additional on street parking supply. Upper Slate Ave. was not considered for access expansion due to existing topography and residential adjacencies.

Approximate Parking Supply: 8-10 vehicles parked parallel to roadway.

Estimated Cost: \$\$



3. Elm Street On-Street Parking

The lower half of Elm St. is divided into upper and lower travel lanes, separated by a guardrail and roughly 6 foot high retaining wall. The southern half, approximately 16 feet wide, could potentially provide on-street parking access, however this would reduce travel lanes to one direction at a time. This alternative could consider expansion of the roadway to accommodate additional on street parking supply. This expansion could be complicated by side slopes.

The upper half of Elm St. has possibilities for on-street parking access where slopes on the northern side are not excessive.

Approximate Parking Supply: 2-3 vehicles per site, 4-6 vehicles total.

Estimated Cost: \$\$\$

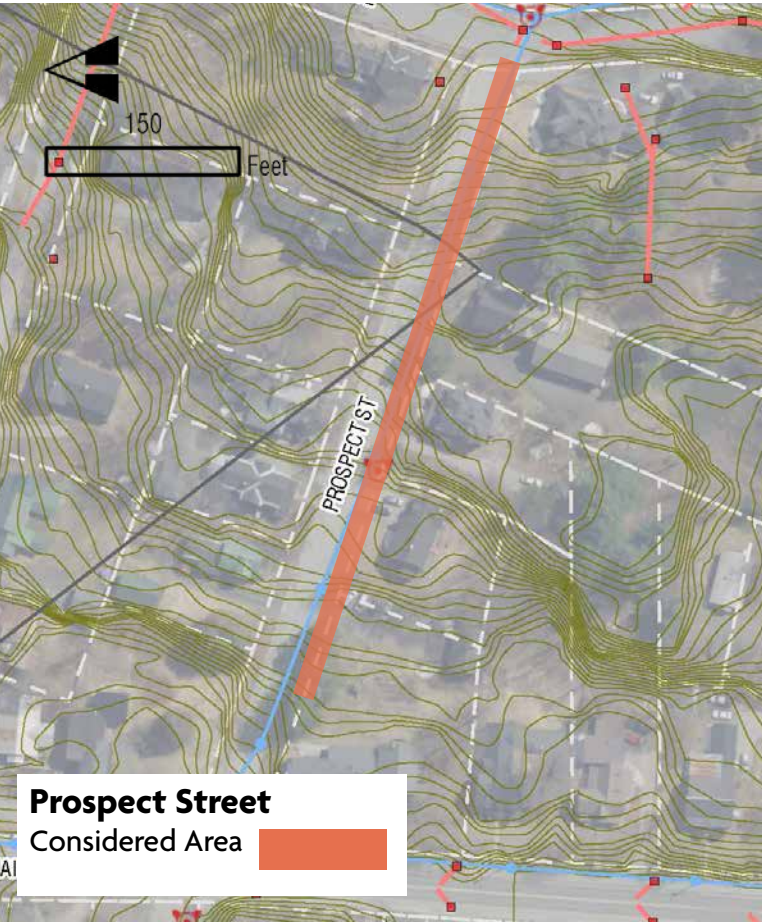


4. Prospect Street On-Street Parking

At approximately 20 feet in width, much of the southern side of the roadway has grades and space appropriate for an expansion of on-street parking access to the Town Forest. However, this would reduce travel lanes to one direction at a time.

Approximate Parking Supply: 10-20 parallel parking spaces.

Estimated Cost: \$\$

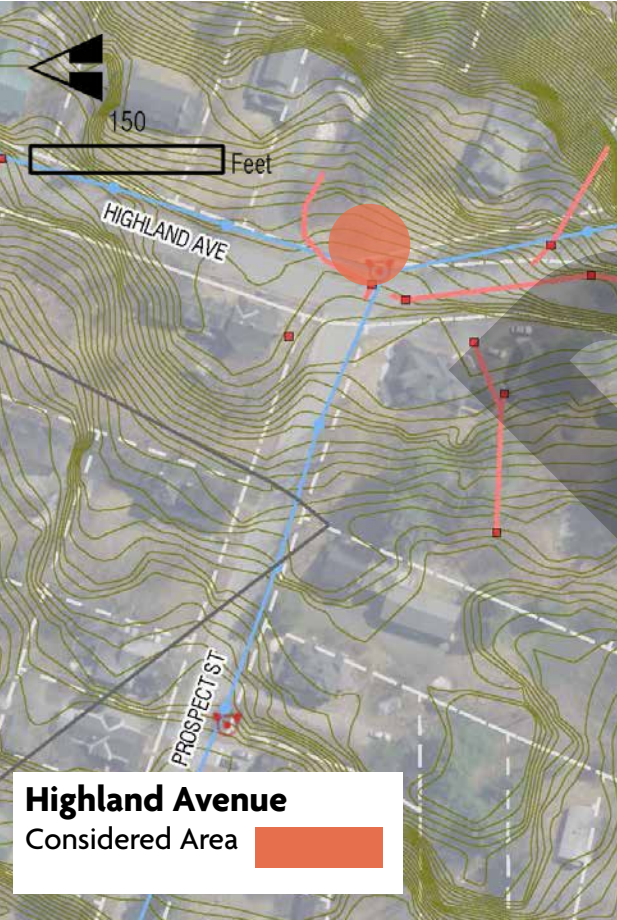


5a. Highland Ave Parking Access Area A

At the intersection of Highland Avenue and Prospect Street, there is a clustering of a fire hydrant, powerpole, and storm sewer inlet. This area of public right of way would be enough to expand the roadway to establish limited forest access parking and/or wayfinding elements. Depending on the designs pursued, a limited amount of private land could be required for acquisition or easements.

Approximate Parking Supply: 2-4 parking spaces

Estimated Cost: \$\$\$

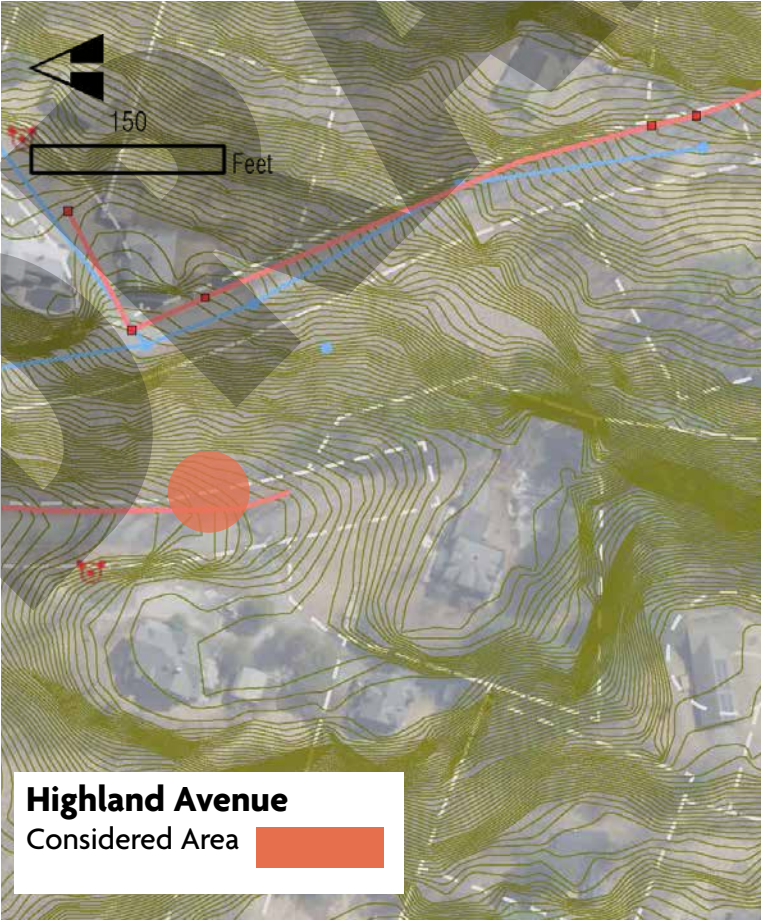


5b. Highland Ave Parking Access Area B

Along the southern dead-end of Highland Avenue, there is an undeveloped parcel of land uphill and to the west. Where slopes are lowest, a small access area could be developed in conjunction with an access trail rising up slope towards the Town Forest access point at the end of Byam Hill Road. A key consideration at this point would be the inclusion of a turnaround area to reduce impacts to the private property driveways further south, as they are the only current turnaround options on this roadway. This parcel is currently privately owned.

Approximate Parking Supply: 2-4 spaces

Estimated Cost: \$\$\$\$

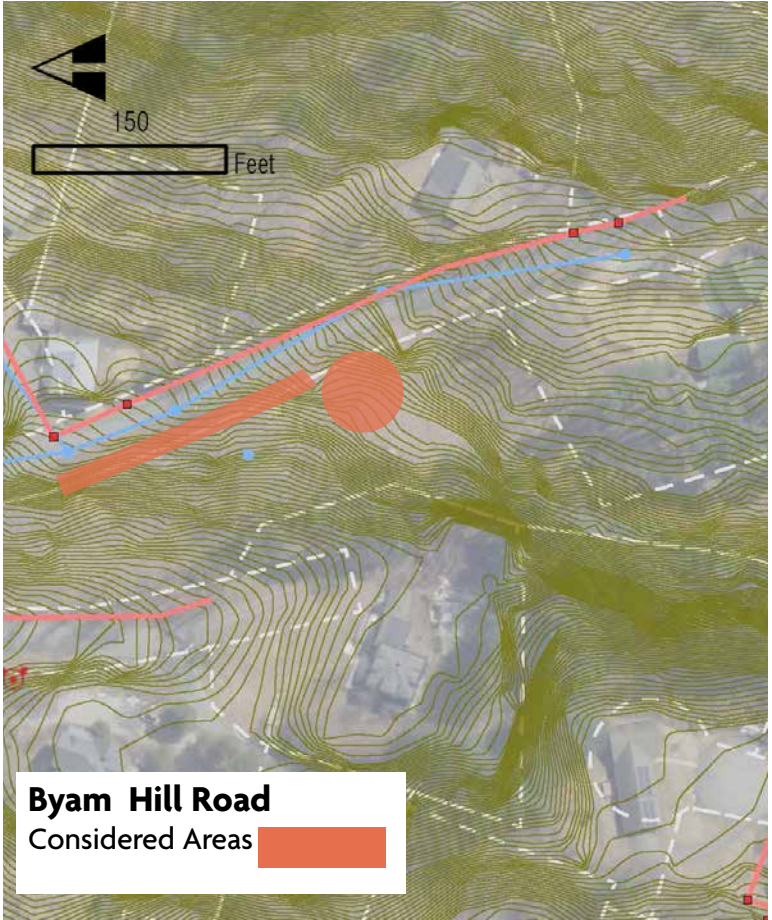


6. Byam Hill Road Parking Access Area

Approximately 350 feet below the public entry to the Town Forest at the end of Byam Hill Road, exists a small area that could be expanded into a small set of parking spaces and turnaround to support Forest Access. As with the Highland Ave Parking Access Area B, a key consideration in any concept furthered at this location would be the creation of a turnaround to ensure that cars leaving this site would not utilize the private driveways further uphill to turn around.

Approximate Parking Supply: 2-4 parking spaces.

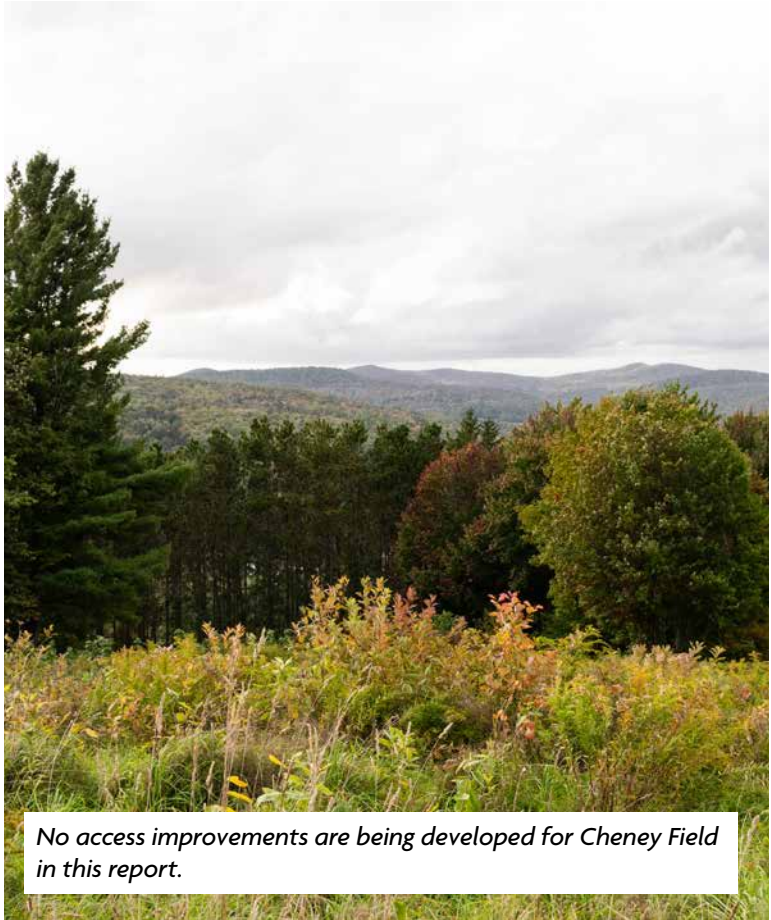
Estimated Cost: \$\$\$\$



7. Lower Cheney Field Access Area

At the lower edge of the Town Forest is an open meadow referred to as Cheney Field. Its scenery and proximity to Town make it a treasured asset. Due to the Town-controlled property and direct connection to the Forest, this site was initially considered for a small parking area, along with needed improvements to the roadway connecting it to the end of Byam Hill Road.

However, due to clear public opposition to development within this natural area, as well as clearly expressed opposition by the neighbors below Cheney Field, this potential forest access option is no longer being considered as part of this study.



8. Shaw Outdoor Center / Green Mountain Family Practice

Currently, the Norwich University owned and operated PFC John Shaw Outdoor Center and adjacent Green Mountain Family Practice function as de-facto forest access points for the public. Public parking for recreation purposes is allowed at both locations, but is not a guarantee to be preserved, as these privately owned sites could change ownership in the future without any need for public process.

Should ownership be amenable, this study could look at ways that access could be improved and supported from these sites through a public/private partnership model and access easements to ensure ongoing public usage of these sites to utilize the Town Forest.

Approximate Parking Supply - 10-20 vehicles

Estimated Cost - \$\$\$



Alternatives Chosen for Study

Based on public input, and a cursory feasibility assessment, the three alternatives selected for further review are:

- Prospect Ave On Street Parking Improvements
- Byam Hill Road Parking Access Areas & Turnarounds
- Shaw Outdoor Center/Green Mountain Family Practice

Prospect Ave has long stretches between driveways for on-street parking and has existing pedestrian infrastructure (sidewalks). The Town will be making stormwater and paving improvements within the next few years and additional improvements could be added into this existing project.

The trail access at Byam Hill Road is the most directly accessible to the Town Forest and Cheney Field. People routinely utilize it to access the Forest, but there is no clear parking or turn-around and often private property is used for these purposes. Signage, parking, and turnaround improvements could mitigate the impacts to private property.

There was overwhelming public support to continue to use and expand the access at the Green Mountain Family Practice and Shaw Outdoor Center. Both entities have been amenable to expanding use of this area. Currently vehicular access is unclear, as is the trailhead at the Family Practice.

Alternatives for Future Study

Downtown

The downtown parking alternative shows significant promise for future forest access, particularly for visitors to Northfield, as wayfinding can link forest recreation with downtown economic development, and ample parking infrastructure is already in place. This study will not look further at that alternative as there is little value to developing a feasibility study where access already exists, and only needs promotion, designation, and appropriate wayfinding.

Slate Avenue and Elm Street

Both areas identified in this study for access could be reviewed for further study, but given a pending pavement project and surrounding grades, utilities, and complexities, Prospect Street was seen as the most feasible of these three neighborhood streets.

Highland Avenue

Both of these areas show potential, but due to budgetary limitations of this study, only one upper neighborhood access improvement was chosen for study. Byam Hill Road was chosen at the expense of the Highland Avenue options due to its relationship to the existing forest access at the summit of this road. Both Highland Avenue access locations could be considered for future study.

Prospect Street

Distance & Climb to Forest

1300' distance, 85' elevation gain

Why Here?

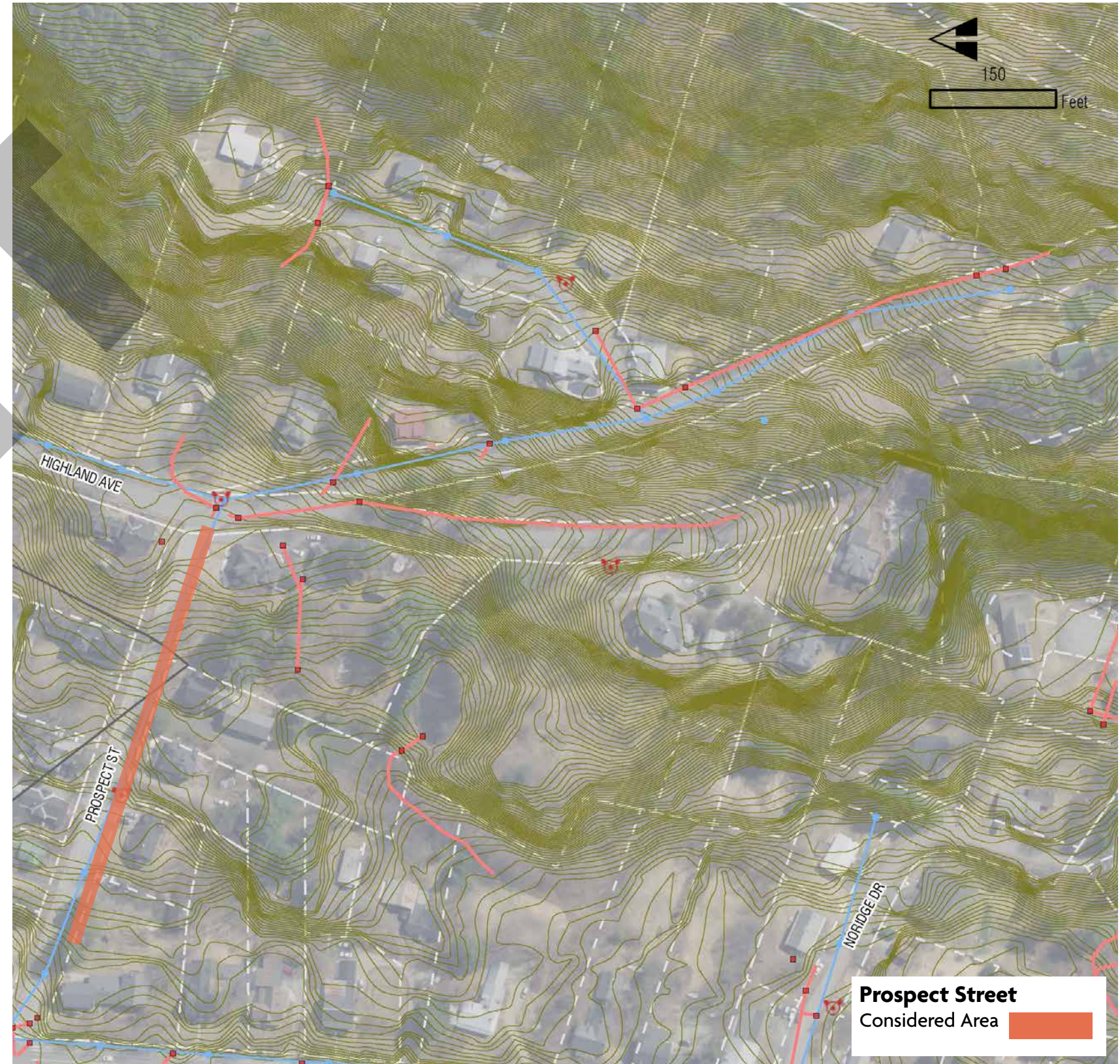
Neighborhood street where parking is already allowed, but only if a person already knows that it is possible to park here.

Why change anything?

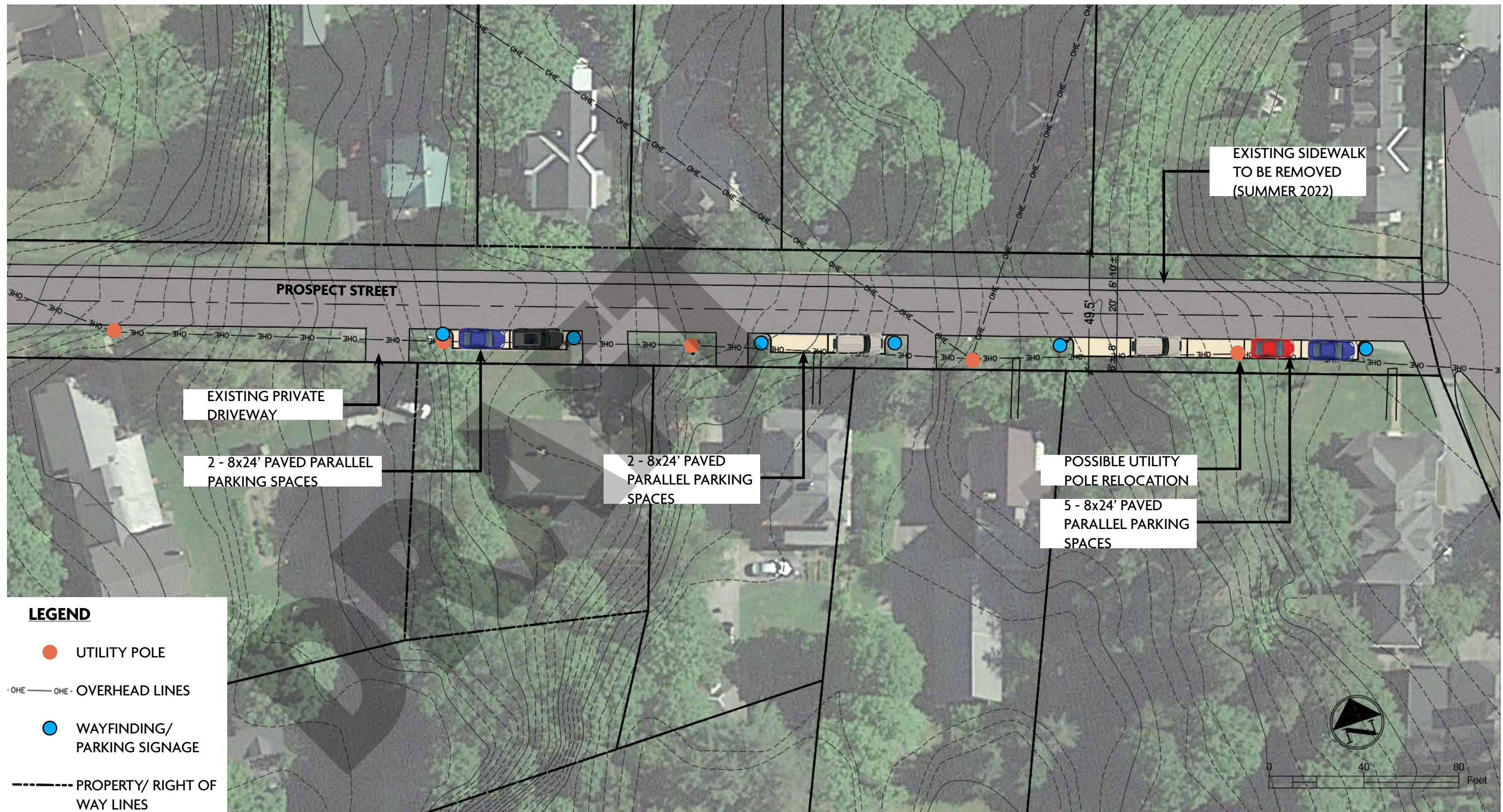
If Forest access parking happens today, it can block traffic flow, impact lawns, and there is no indication of where one should or should not park along the street corridor.

Public Comments & Input:

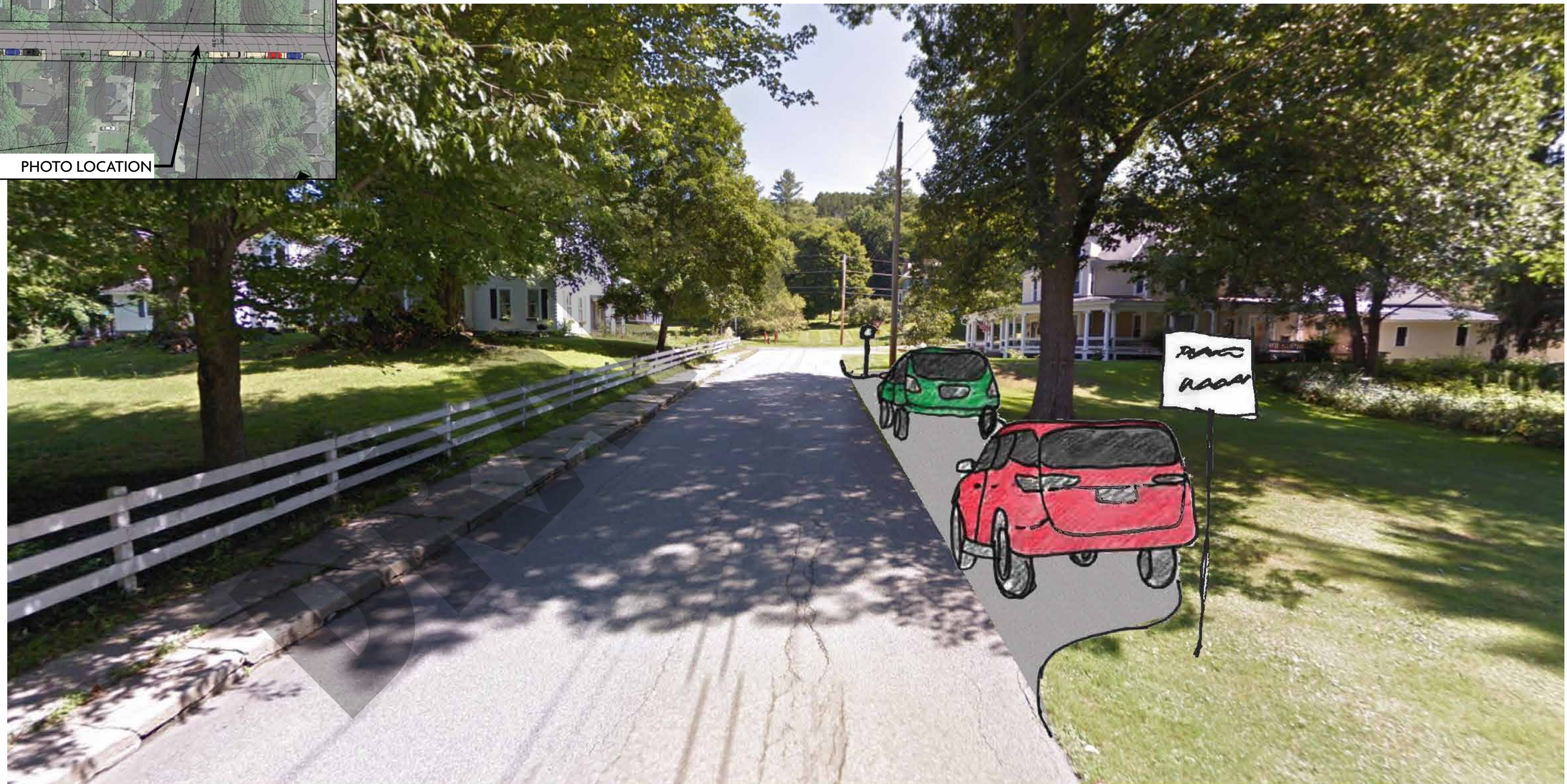
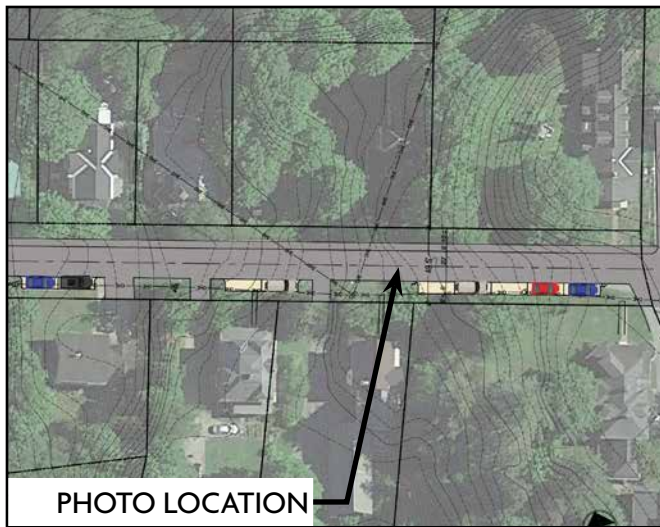
- “Allowed parking locations are unclear”
- “Improvements should be small and subtle”
- 48% in favor of multiple small access points



Prospect Street
Considered Area



PROSPECT STREET PARALLEL PARKING PLAN VIEW



PROSPECT STREET PARALLEL PARKING ILLUSTRATION

Byam Hill Road

Distance & Climb to Forest

<500' distance, 15' elevation gain

Why Here?

This access point creates opportunity for community members to access the Forest who may not have the ability to access from further away.

Why change anything?

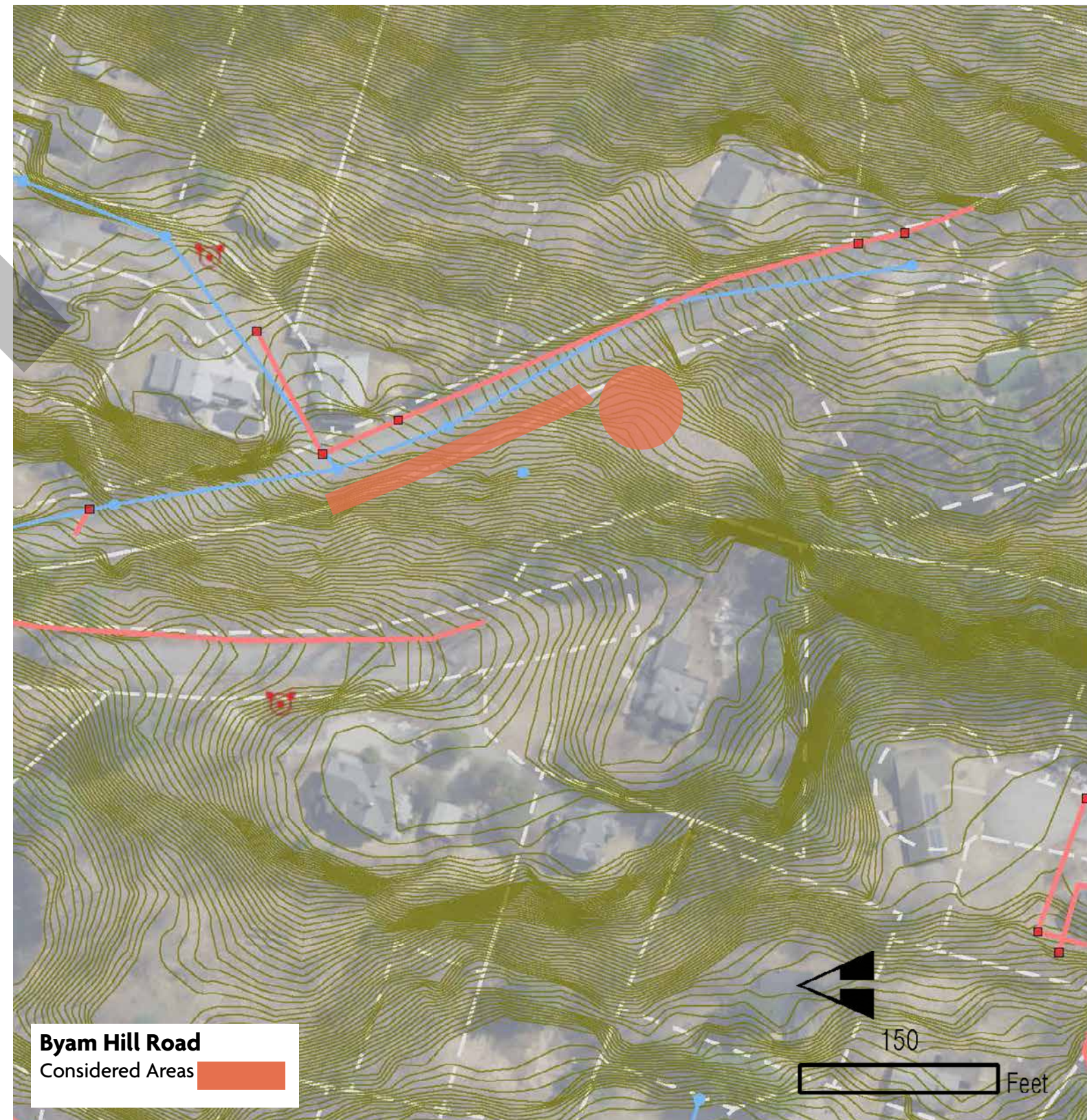
This entry to the Forest will always be an entry to the Forest, and this design responds to providing parking and turnaround facilities for vehicles where currently none exists.

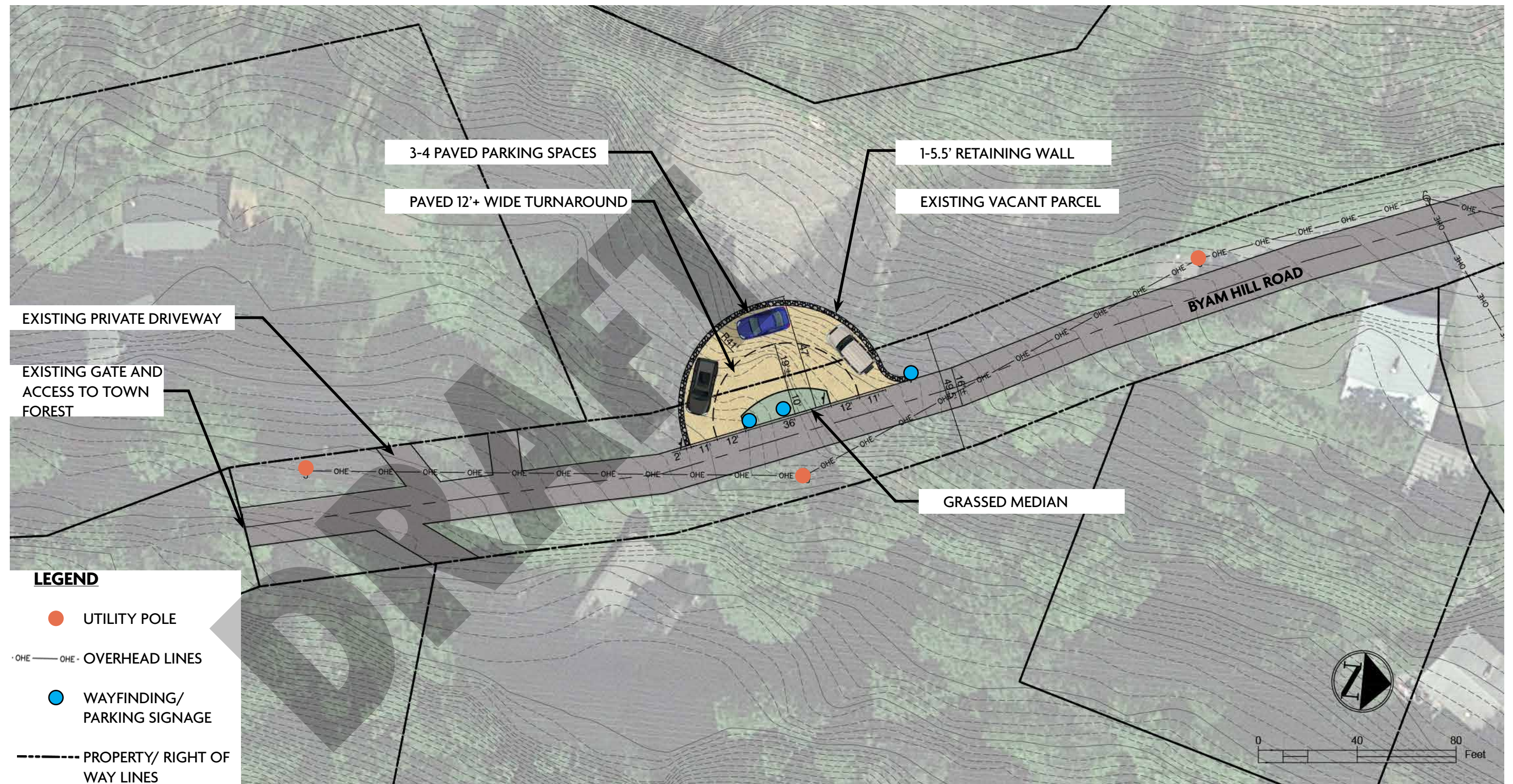
Public Comments & Input:

- “Vehicle turnarounds on street impact private property and create unsafe conditions”
- “If we’re going to invest in forest access, lets make changes that help people who can’t currently access the forest”
- “People will always access the forest here”

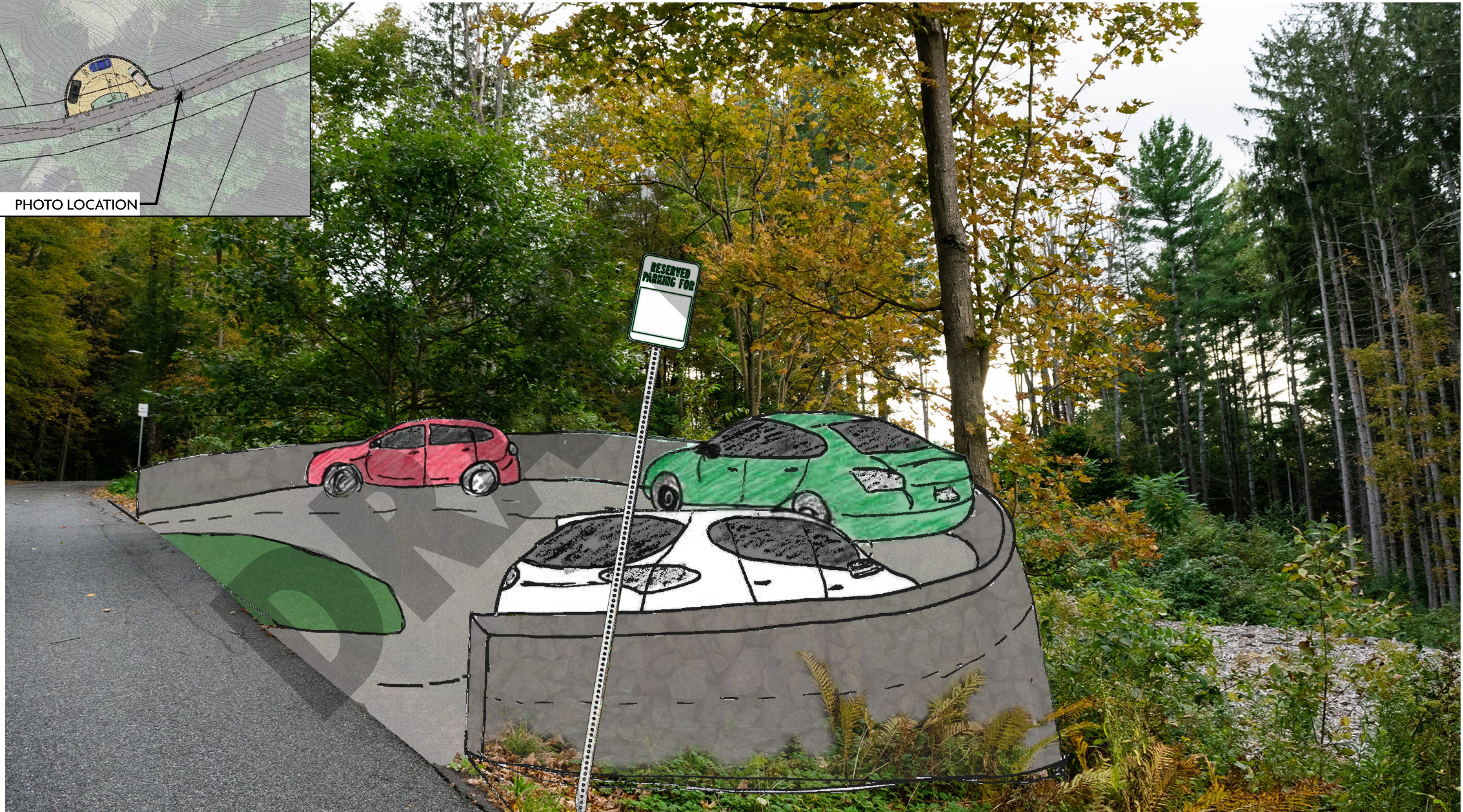
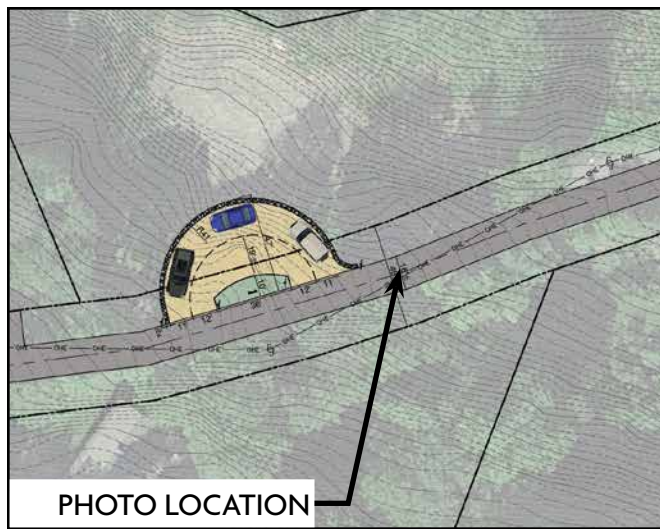
Approach

Two designs are proposed at this site that create opportunities for vehicles to turnaround without utilizing private driveways, while providing limited parking access at the summit of this roadway.

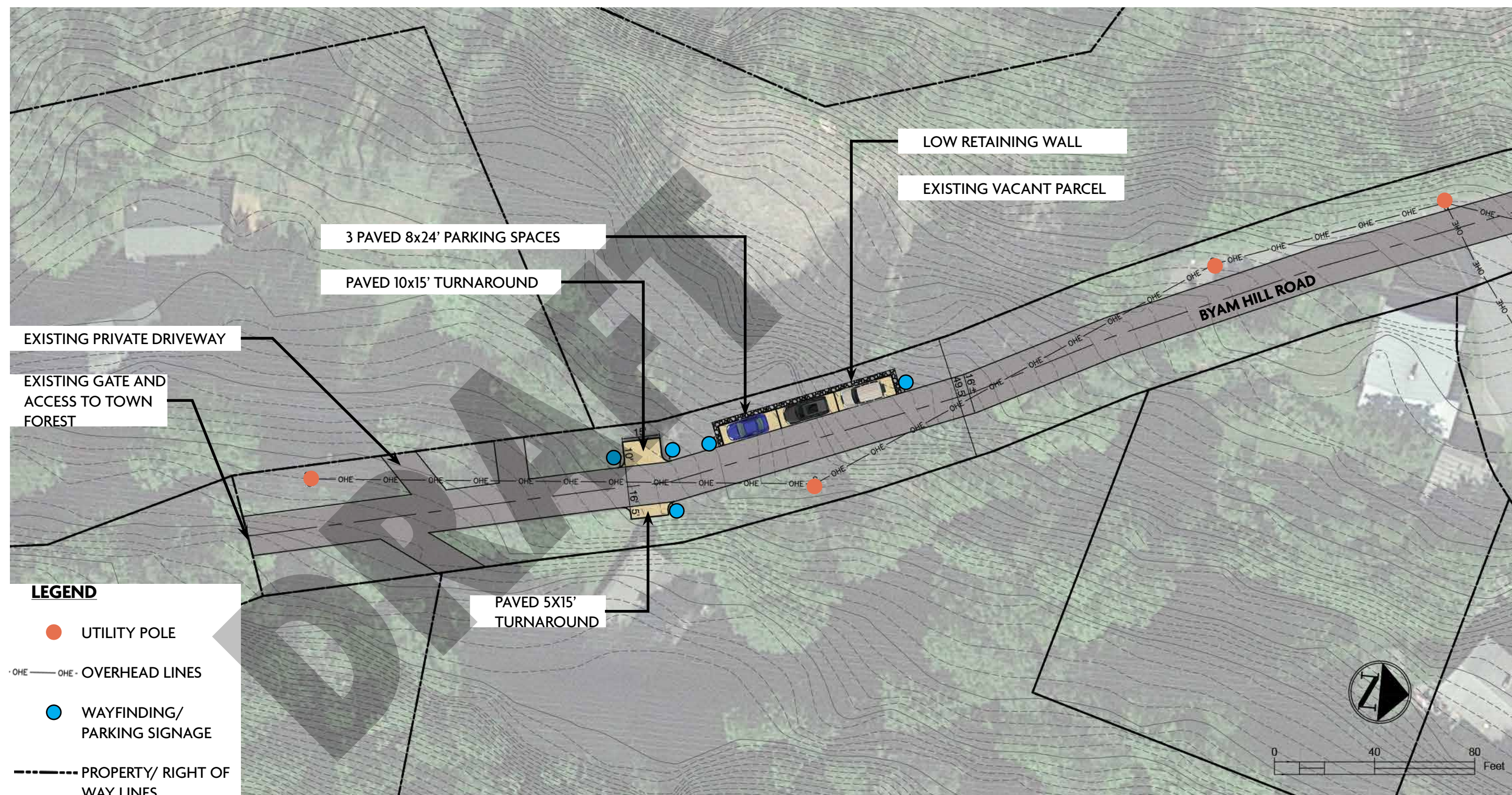




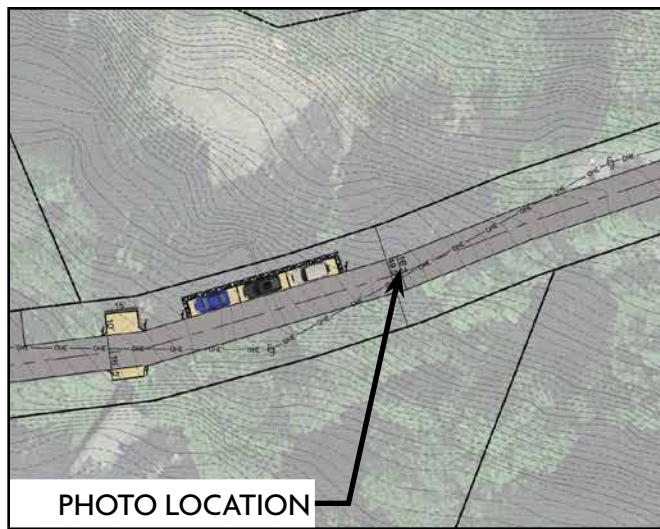
BYAM HILL ROAD TURNAROUND AND PARKING - V1 PLAN VIEW



BYAM HILL ROAD TURNAROUND AND PARKING V1 ILLUSTRATION



BYAM HILL ROAD TURNAROUND AND PARKING - V2 PLAN VIEW



BYAM HILL ROAD TURNAROUND AND PARKING - V2 ILLUSTRATION

Green Mountain Family Practice & Shaw Outdoor Center

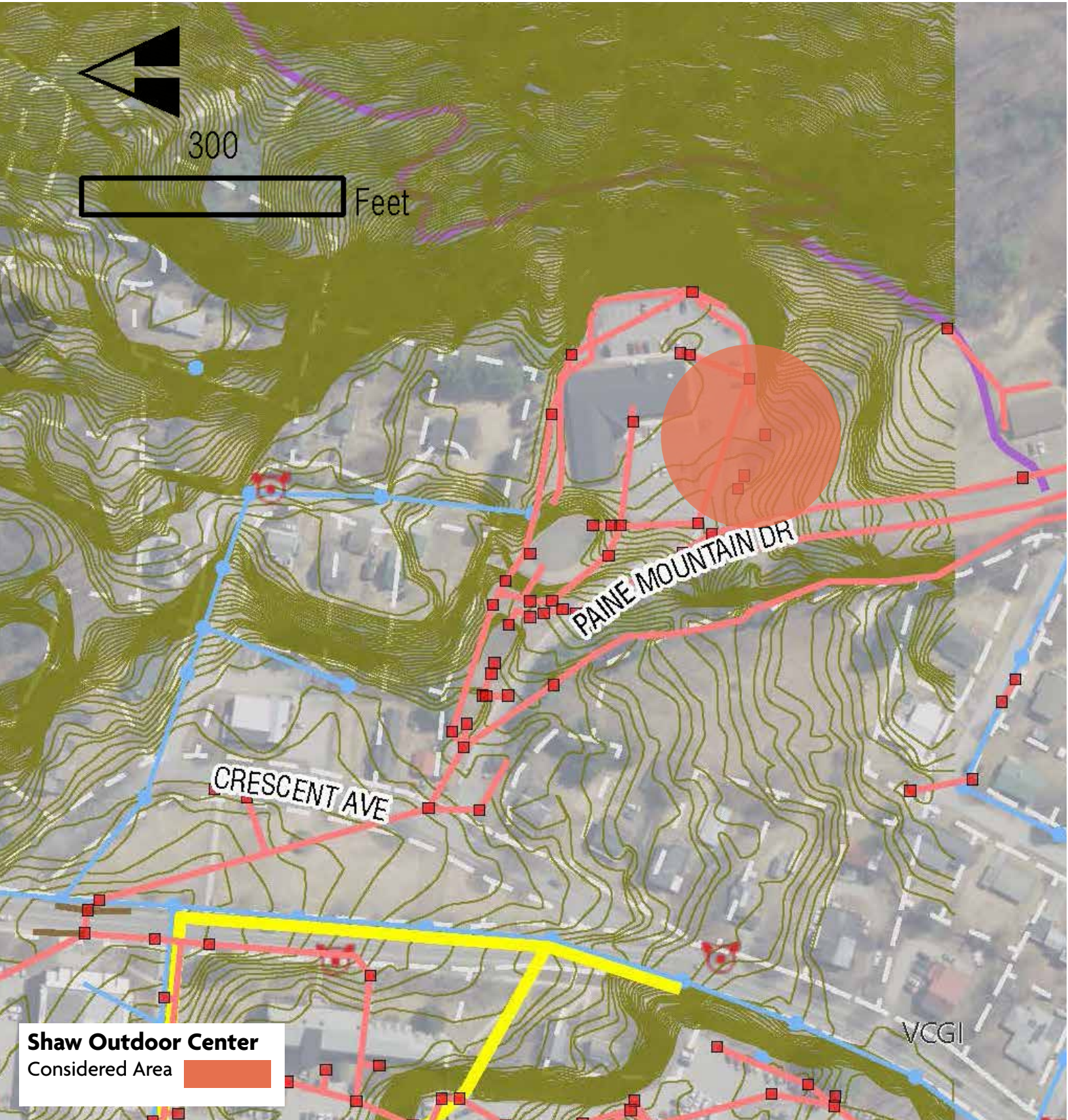
Nearest Forest Entrance
<500’ distance, 10’ elevation gain

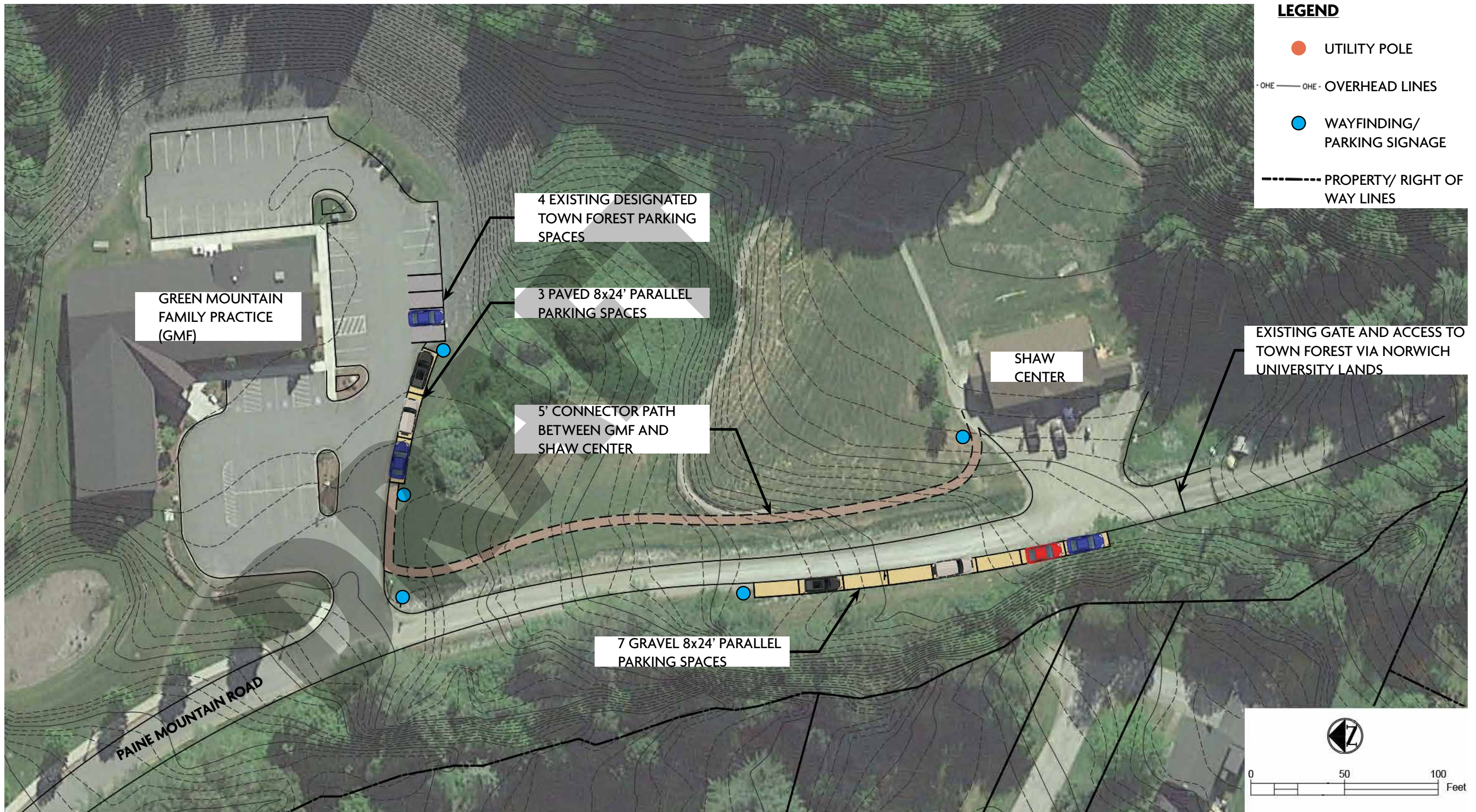
Why Here?
This site already hosts the only designated public forest access parking sites (4). An expansion of designated forest access parking spaces here would support improved Forest access without additional neighborhood impacts.

Why change anything?
The current public forest access parking supply at Green Mountain Family Practice and Shaw Outdoor Center is minimal, and an expansion and formalization of allowed access at this site could support Forest access and avoid changes or impacts to the Slate Avenue neighborhood.

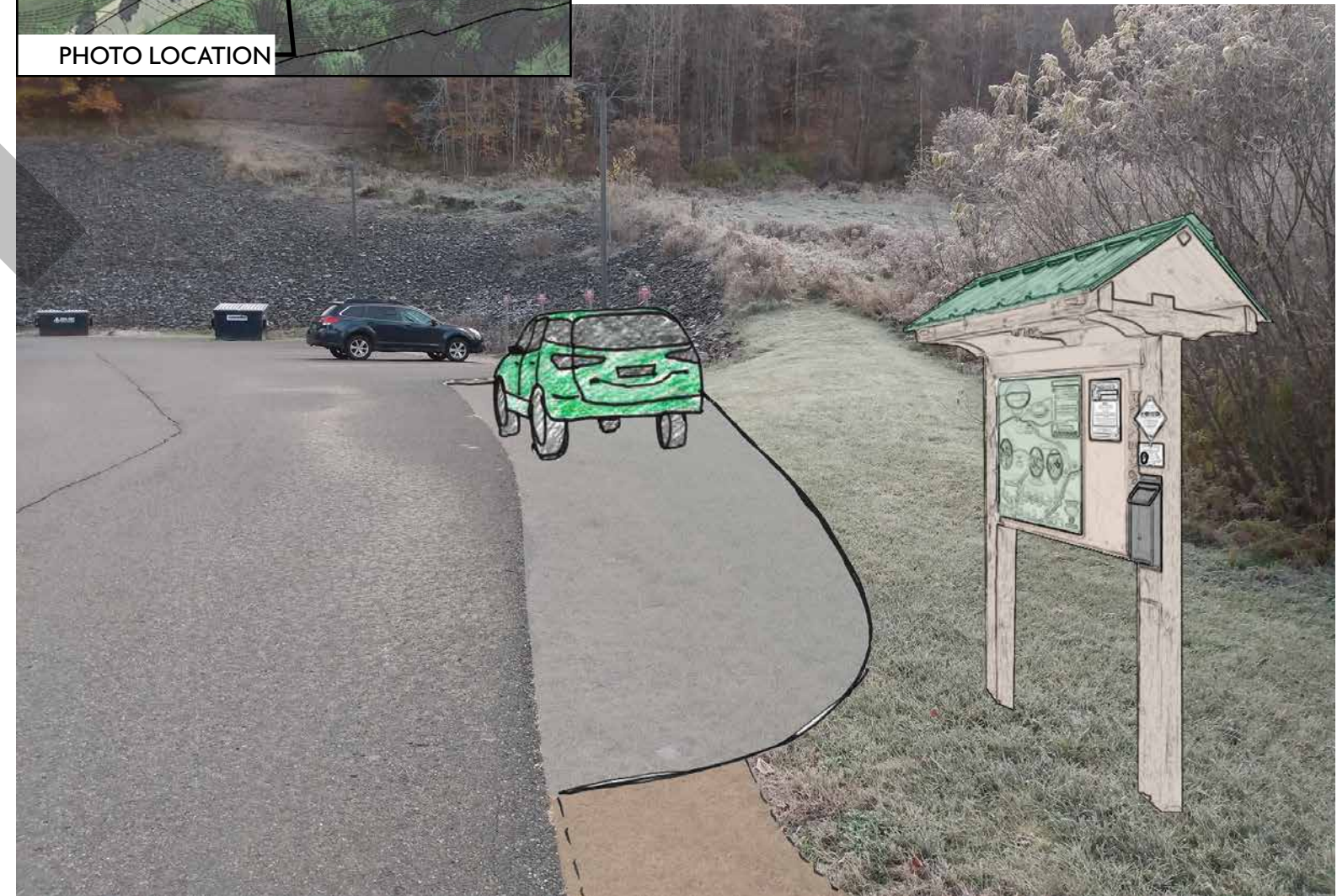
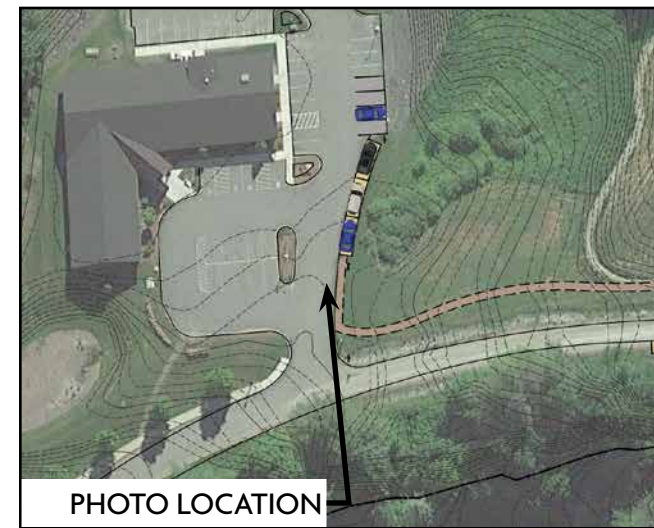
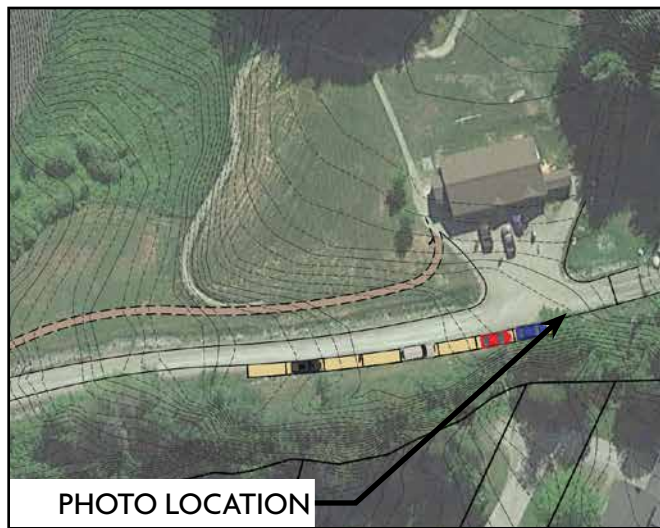
- Public Comments & Input:**
- “Neighborhood residents shouldn’t have to bear the impacts of more people coming into the forest”
 - “Shaw Center already provides parking”

Approach
Any improvements illustrated in this report would only be feasible through as a joint Town of Northfield and Norwich University project. The land is all owned by Norwich University, and their support must be secured before any additional steps could be taken towards improving public Forest access at this site. There is a great deal more that could be designed at this site; the following concept is intentionally





GREEN MOUNTAIN FAMILY PRACTICE AND SHAW OUTDOOR CENTER PLAN VIEW



GREEN MOUNTAIN FAMILY PRACTICE AND SHAW OUTDOOR CENTER ILLUSTRATION

8 parking spaces, wayfinding and connector path.

Public Review of Alternatives

In addition to the public engagement held at the start of the project, an additional round of engagement was held during the alternatives process. The three final alternatives were presented at a Select Board meeting on November 23, 2021 and were subsequently posted in an online public survey from December 12, 2021 through January 12, 2022.

Comments heard during the Select Board meeting included:

- Repeated concerns regarding safety and use of Byam Hill Road, particularly in the winter
- Preference for the Shaw Center/ Green Mountain Family Practice alternative, pending agreement with Norwich University and Act 250
- Need for wayfinding
- Curiosity regarding temporary parking on certain streets
- Acknowledgment by Select Board of the importance of outdoor recreation
- Desire by the Select Board to consider other access points such as Turkey Hill Road and Forest Road
- Acknowledgment by the Select Board that any private land use by the Town would only occur with agreement and payment

Online Survey Results

75 people took the second online survey developed as part of this study for the final alternatives.

Many of the responses against this option were concerned with the impact to the homeowners on the street, the appearance of taking front yards and the impacts of additional pavement.

However some of those opposed were so because the alternative does not go far enough to address equitable access and were concerned about the expense of an option that still isn't close to a trailhead.

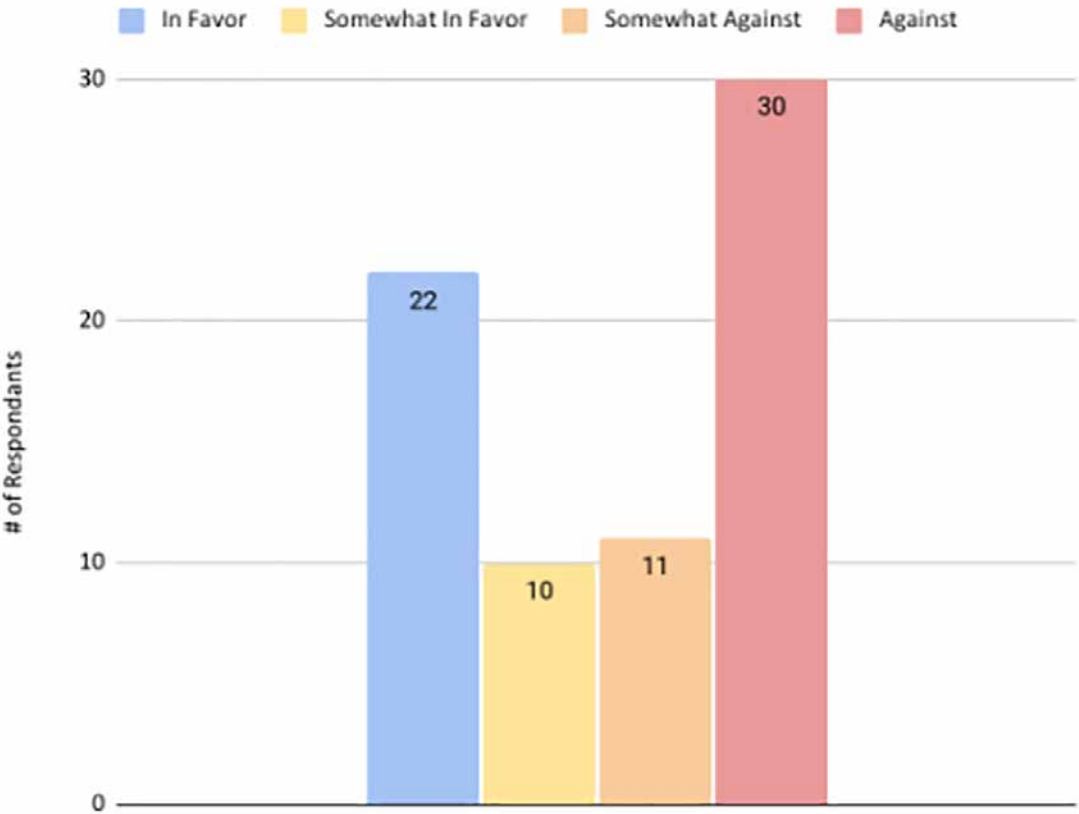
Favorable responses viewed the alternative as a low-cost, low-impact way to increase access that is closer than parking downtown or on Main Street.

Improvements at the Shaw Outdoor Center and Green Mountain Family Practice were overwhelmingly favored by survey respondents. Respondents cited fewer impacts on residential neighborhoods and existing recreational access infrastructure at this location.

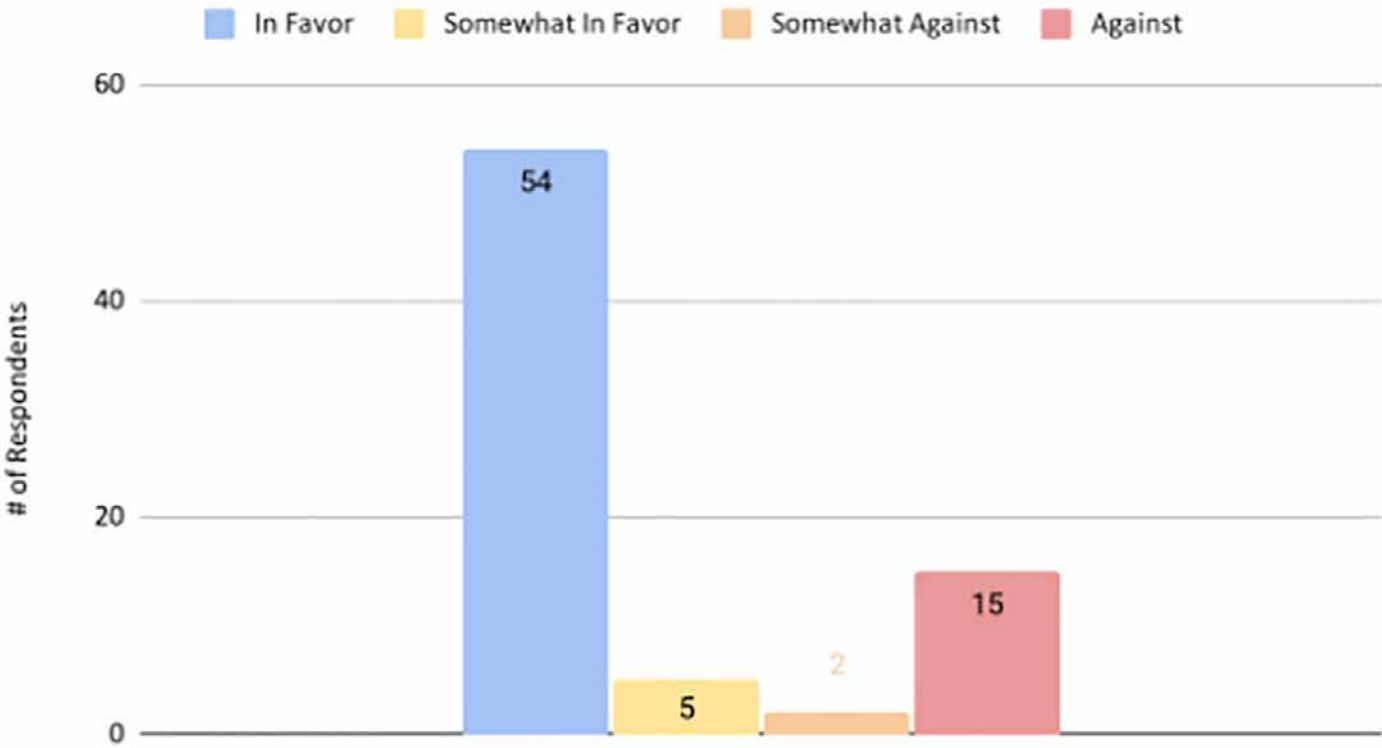
There are some concerns among those in favor regarding continuing to improve access in an area that relies on agreements with Norwich University. There are additional concerns that this doesn't solve the issue of equitable access to the Forest as the trails in this area are quite steep and that this should be done in conjunction with other access improvements.

Those not in favor of improvements were generally against promoting any increased access into the Town Forest and had concerns regarding increasing impervious surfaces.

Prospect Street Parking Improvements



Shaw Center and Green Mountain Clinic Parking Improvements



Favorable responses reflected the desire for parking access close to the Town Forest, particularly for those with limited mobility or young children. These responses appreciated the turn-around as a solution to reduce impacts on private driveways, provided this is coupled with adequate signage.

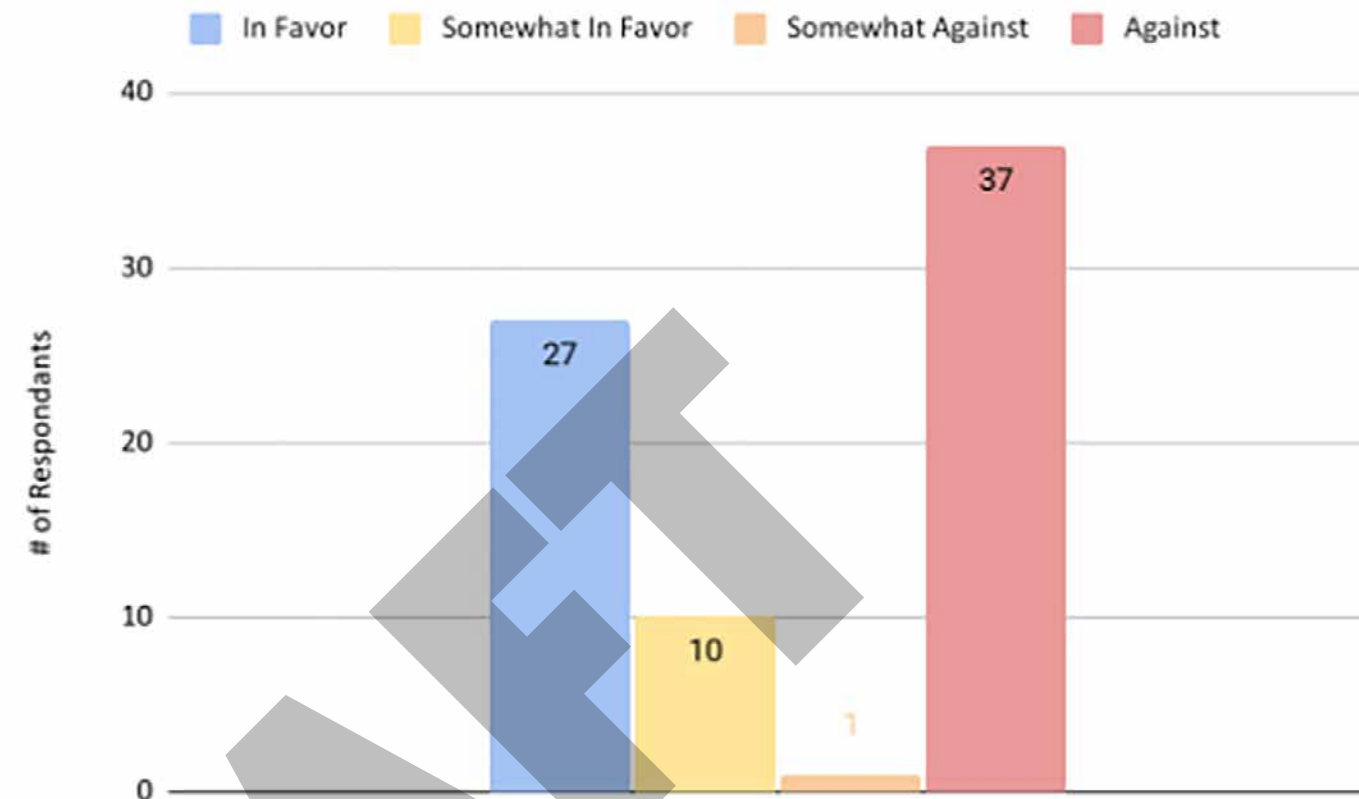
There was abundant concern regarding the safety issues of more vehicles on the road as well as the cost of constructing this option and the ability to utilize privately-owned land as well as maintenance issues. There was additional concern that even with signage and a turnaround that property owners at the top of the hill would still be negatively impacted.

There was less favorable support for alternative 2. Community members felt that it contained a great deal of alteration yet did not provide sufficient parking or turnarounds.

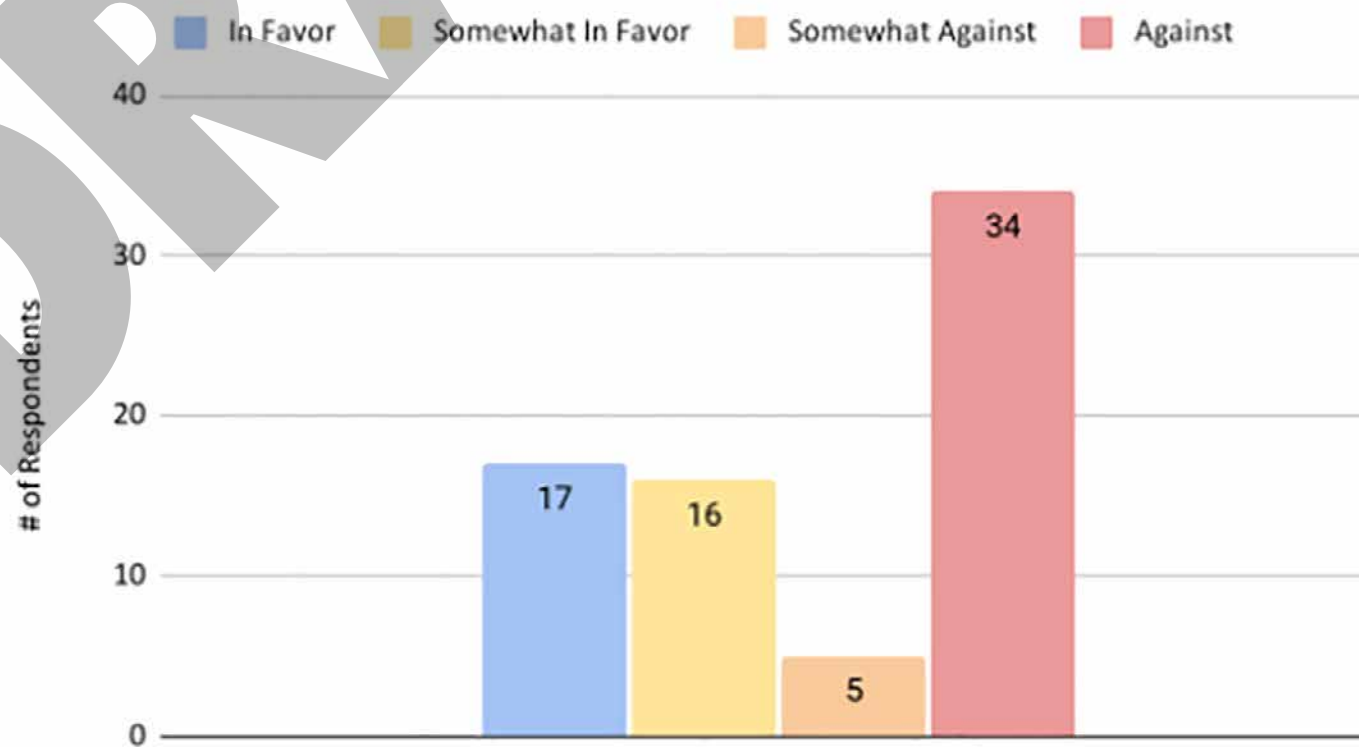
Favorable responses again reflected the desire for closer access to the Town Forest and felt that this could be a reasonable solution that required significantly less money and alteration than the full turnaround.

Unfavorable responses were similar to alternative 1 with concerns regarding safety and impacts to property owners as well as concern that the smaller turnaround would not be sufficient for larger vehicles.

Byam Hill Alt. 1 Parking Improvements



Byam Hill Alt. 2 Parking Improvements



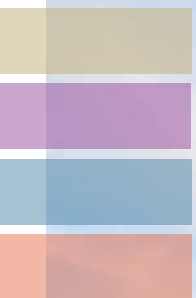
Alternatives Matrix

This alternatives matrix is utilized to help the Town of Northfield and Project Team assess the relative merits of the three selected alternatives. Based on existing conditions analysis and preliminary designs, each selected alternative is ranked based on its impacts to the natural environment, local neighborhood, public utilities, and provision of Forest access to groups that do not currently enjoy easy access.

The alternatives with the fewest impacts receive the highest scores. The alternatives with the greatest impacts receive the lowest scores.

The estimated cost of each alternative is then compared alongside the total score to better assess the relative value of investment for the Town of Northfield and partner agencies in developing improved Forest access.

	Cost	Slope Complexities	Utility Complexities	Direct Property Impacts	Public Feedback	Equity	TOTAL
	What is the conceptual project cost?	Will adjacent slopes make design and construction more complicated? High Slopes = 1 Low Slopes =3	Will construction of the access area require relocation of utilities? Many Relocations = 1 No Relocations = 3	Will construction require acquisition of easements from adjacent properties? Yes = 1 No = 3	Are adjoining neighbors and the public in support of this design? No = 1 Yes = 3	Does this access site significantly improve access for families, elderly, and others who may currently struggle to access the town forest? No = 1 Yes = 3	Best Ranked Alternatives = High Scores Worst Ranked Alternatives = Low Scores
Alt 1	\$\$	3	2	3	1	2	11
Alt 2 Byam Parking Access	\$\$\$\$	1	3	1	1	3	9
Alt 2 B Byam Parking Access	\$\$\$	2	3	3	1	3	12
Alt 3 Clinic/ Shaw Center	\$\$	3	3	2	3	2	13



Recommendations



Recommendations and Next Steps

As a result of this Feasibility Study process, here are the five key recommendations.

1. Promote Downtown as existing access.

Summary

- There is tremendous support for promoting the existing parking available downtown and encouraging people to walk or bike to the Town Forest.
- Increased signage and wayfinding downtown should indicate parking areas and routes to the Town Forest. Wayfinding at Forest entry points should also include reference to public parking resources already in existence Downtown.
- Page 7 of this report shows locations of parking throughout Downtown.

Actions

- Create a map or maps of the Forest access points, public parking areas, and distances between the two to be posted online and printed. Printed maps can have a QR code for online access.
- Install kiosks Downtown and at Forest access points (Slate Ave, Byam Hill Rd) with maps and additional desired information.
- Install Town Forest signs with directional arrows and distances - these could initially be temporary signs.
- Install/update Downtown parking signs to note Parking for Town Forest.

2. Shaw Center/ Green Mountain Family Practice Expansion and Partnership.

Summary

- Parking already exists at this location, however on busy days all spots are taken, making it a logical and popular location to expand access to the Town Forest.
- Lack of signage leading up to Paine Mountain Drive make it unclear where parking is allowed and where the access is located.

Actions

- Approach Norwich University to arrange a Memorandum of Understanding (MOU) or other legal agreement to create an ongoing partnership that can facilitate the development of improved forest access as illustrated in this report.
- The proposed alternative in this report can be thought of as having four parts that should ideally be funded and installed in concert:
 - ◊ Parking expansion at Green Mountain Family Practice
 - ◊ Parking expansion at the Shaw Outdoor Center
 - ◊ Trail from the Green Mountain Family Practice to the Shaw Outdoor Center
 - ◊ Kiosks and Wayfinding
- Consider arrangements that provide Town funding for Forest access improvements in exchange for an easement that guarantees public access through Norwich University property to the Northfield Town Forest in perpetuity.
- Environmental permitting and an Act 250 review will likely be required and should be coordinated with Norwich University.
- Signage should begin on Main Street to clarify how to reach parking and access trails.
- Kiosks can contain the same or similar maps to those Downtown and at other Forest access points.



Example of wayfinding



Example of Town Forest kiosk in Randolph, VT



Example of Memorial Forest Sign in Guilford, VT



Example of Town Forest wayfinding in Vernon, VT

3. Test Promotion of Neighborhood Parking

Summary

- Neighborhood parking on many residential is currently allowed in Northfield per the [Town Traffic Ordinance](#) but is often unclear.
- Parking along residential streets is the closest way to access the Town Forest at the Slate Ave and Byam Hill access points, however there are concerns about increased parking in residential neighborhoods.

Actions

- Create a temporary demonstration project utilizing temporary parking signs ([as seen in Richmond, VT](#)). This temporary project approach could be supplemented by online resources that can direct Town residents to approved recreational parking areas.
 - ◊ Utilize the Town of Richmond as a resource.
 - ◊ Kevin McAleer, Parking Advisory Committee Chair
mcmcaleer@gmail.com
- Utilize online and physical maps (from Recommendation #1) that indicate where on-street parking is permitted.
- These temporary parking resources could rotate from one year to another to test functionality of Slate, Elm, or Prospect as recreational parking access.
- Should any prove successful, more permanent solutions as outlined in this feasibility study could be developed.

4. Byam Hill Road Turnaround

Summary

- This option improves equitable access into the forest for all ages and abilities. Though this neighborhood location is not supported by all adjacent landowners, this access point developed in conjunction with other improvements listed here is an important aspect of developing equitable and dispersed public forest access for all ages and abilities.

Actions

- The next stage of this project will be design development, and should be approached after other public parking elements have been well established both in Downtown and the Shaw Outdoor Center.
- Promotion of this location, due to its sensitive neighborhood character could be considered as a Town-specific resource and included in Town communications but not trail maps and brochures.
- Access could be limited to specific groups (handicapped, families) and/or restricting seasonal access.

5. Promote Walk and Bike Access at Other Forest Access Points.

Summary

- Spread out access by continuing to promote non-motorized access from Slate Ave and Turkey Hill Road.

Actions

- Add locations and distances to maps and signs as discussed in Recommendation #1.
- Add Town Forest signs along Main St at Slate Ave, Prospect St, and East St/Turkey Hill Rd intersections.

Grants and Funding

Funding available through different sources can assist Northfield with accomplishing these recommendations.



Example of temporary parking signage



Example of temporary parking signage



Example of temporary wayfinding

Grant Opportunities

Grant Title	What does it fund?	Maximum Grant Amount	Match Requirement	Who can apply?	Federal Funding	Recent Application Deadline	Grant Contact
VOREC Grants	Construction of trails, trailheads, outdoor recreation facilities that support local economies	\$50,000 minimum. No Maximum		Municipalities and 501(c) Orgs	Yes	Winter 2021	Jackie Dagger jackie.dagger@vermont.gov 802-636-7410
Vermont Department of Forests, Parks & Recreation - Recreational Trails Program	Construction & Maintenance of trails Easements for Trail Access Trailheads & wayfinding elements	\$50,000.00	20 percent	Municipalities and 501(c) Orgs	Yes	Spring 2022	Sherry Smecker Winnie - sherry.winnie@vermont.gov 802-760-8450
The Department of Forests, Parks and Recreation Enhancement of Recreation Stewardship and Access (ESRA) Trail Grants	Projects focused on the stewardship and accessibility of trails	\$25,000.00	None Required	Municipalities, 501(c) Orgs	No	8.27.2021	Sherry Smecker Winnie sherry.winnie@vermont.gov 802-760-8450
AARP Community Placemaking Mini-Grants	Pop up projects and placemaking efforts - often associated with events.	\$3,000.00	None Required	Municipalities and 501(c) Orgs	No		Kelly Stoddard Poor kstoddardpoor@aarp.org 802-951-1313
Association of Vermont Conservation Commissions	Small actions by member conservation commissions.	\$250-600	Matching funds or in-kind services	Members of AVCC	No	4.8.2022	vtconservation@gmail.com

Conceptual Cost Estimate for Shaw Outdoor Center Concept

This estimate is conceptual in nature and could be higher or lower based on a number of factors. It includes the elements required for construction and permitting of the proposed design.

The Shaw Center concept is developed as a low-impact alternative with minimal infrastructure apart from parking, access trail, and signage. Give the use and size of this site, there could be additional options developed in the future with agreements from both Northfield and Norwich.

Refer to Page 33 for the full concept design.

Design Updates:

Preliminary drafts of this study have already generated discussion between the Town of Northfield and Norwich University. These discussions point towards a more expanded form of this design alternative that may be represented in a future draft of this report.

	Amount	Unit	Unit Cost	Cost
Shaw Center Parking <i>Updated access trail, expansion of 11 graveled parking spaces, and wayfinding signage</i>				
Clearing and Grubbing	0.10	AC	\$ 33,793	\$ 3,379
Common Excavation	55	CY	\$ 22	\$ 1,189
Aggregate Subbase	27	CY	\$ 37	\$ 999
Aggregate Surface Course	27	CY	\$ 47	\$ 1,250
Trail Construction	400	lf	\$ 10	\$ 4,000
Wayfinding Signs, Small	3.00	ea	\$ 150	\$ 450
Trailhead Kiosks, Large	2.00	ea	\$ 500	\$ 1,000
			Subtotal	\$ 12,268
Permitting (Cultural, Act250, Stormwater)	1.00	LS	\$ 15,000	\$ 15,000
Design (15%)				\$ 1,840
Concept Estimate Contingency (25%)				\$ 7,640
				\$ 36,748 Concept Trailside Parking Cost

