

**Addison County
Regional Planning Commission**
And
The Town of Lincoln

Bicycle & Pedestrian Planning & Feasibility Study
Final Report



Submitted by:
Broadreach Planning & Design

In conjunction with
Lamoureux & Dickinson Consulting Engineers, Inc.
Heritage Landscapes LLC

June 18, 2011

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I. INTRODUCTION

A. OVERVIEW

The Addison County Regional Planning Commission (ACRPC) and the Town of Lincoln (Lincoln) undertook a pedestrian and bicycle feasibility study to examine the most appropriate method of enhancing non-motorized travel between the center of Lincoln village, the Lincoln Community School, the local recreational fields and the Town Forest. The project study area extends along both sides of East River Road for several hundred feet between the center of Lincoln and the Lincoln Town Forest. **Figure 1** shows the approximate extent of the study area.

The project was developed through a collaborative effort between Lincoln and the ACRPC, using a consultant team led by Broadreach Planning & Design (BRPD) and numerous public involvement opportunities. **Appendix A** includes a short description of the study process used for this project.

Following this introduction, the report is divided into six additional sections:

- II. Recommendations,
- III. Existing Conditions,
- IV. Potential Impacts
- V. Phasing,
- VI. Initial Estimates of Probable Construction Costs, and
- VII. Implementation.

It is organized to provide basic information about the project, followed by the recommendations. Those that would like to understand more about the area, the existing conditions, the process of developing the study, or other aspects of the project and recommendations can look for this information further into the document or in the Appendices.

The report is formatted for double sided printing.

B. PURPOSE & NEED

The purpose of the Lincoln Bicycle and Pedestrian project is to:

- Provide a secure, easily used means for bicyclists and pedestrians of variable ages and abilities to travel between the Community School, the Town Forest, the Village Center, and/or the Lincoln Sports fields on Gove Hill Road;

- Increase the mobility of pedestrians and bicyclists in and around the Village area without significant increases in ongoing maintenance costs for the Town, and
- Provide economic development, conservation, cultural and community enhancement, and recreation benefits to the Town.

The need for the path can be seen in:

- The limited locations where it is easy and convenient for pedestrians and bicyclists to travel along East River Road;
- The desire lines and foot paths along the edges of East River Road, and
- The tendency for numerous travelers between the Community School, the Village Center and the Lincoln Sports Fields to use a motor vehicle for these trips.

C. PROJECTED USERS

1. OVERVIEW

The Town would like to improve bicycling and walking conditions for as many of the pedestrians and bicyclists of all ages and abilities as possible. This means that as much as possible, the improvements should be usable by school children, elderly citizens, and those with disabilities. They should also enhance conditions for skilled bicyclists.

The following sections provide more information on the abilities and needs of the different types of pedestrians and bicyclists.

2. PEDESTRIANS

Pedestrians vary significantly in their skills, experience, and willingness to walk different distances. Strong determining factors for pedestrians are the time and mobility required to reach their destinations. Time and mobility constraints also dictate the pedestrian's usable geographic space; few urban pedestrians will venture more than one mile from point to point; most actually will only undertake trips shorter than ½ mile, unless the trip is recreational.

There are three basic pedestrian user groups:

- Active pedestrians,
- Basic pedestrians, and
- Circumscribed pedestrians.

Active pedestrians use the road system regularly for transportation, as well as for fitness. They know and generally follow the rules of the road. Basic pedestrians include the majority of older children and healthy adult pedestrians. Circumscribed pedestrians are those whose speed and mobility are extremely limited. In all cases, when walking on roads, pedestrians should walk **FACING** traffic on the left side of the road.

3. BICYCLISTS

Among bicyclists, there are three typical user groups that can be expected to use the multi use path:

- Advanced bicyclists,
- Basic bicyclists, and
- Beginner bicyclists or children.

Advanced bicyclists are highly experienced bicycle riders who feel comfortable riding their bikes in heavy traffic and typically prefer to ride on roadways.

Basic bicyclists comprise the largest category of bicycle riders, including older children, inexperienced adult riders, occasional bicycle commuters, recreational adult bicyclists, and experienced riders who still fear or dislike riding in urban traffic conditions. Basic bicyclists are reasonably competent in handling their bicycles and they generally understand the rules of the road, but they ride at more moderate speeds and are generally uncomfortable on busy streets unless a striped, obstacle-free shoulder is provided and traffic volumes are low.

Beginner bicyclists have the weakest bicycling skills. Beginner bicyclists ride more slowly, don't always understand the rules of the road, and are typically uncomfortable riding with motor vehicles. They are best accommodated on low-speed local roads and multi user paths or even sidewalks for the very young where there are few, if any driveway crossings.

When riding on roadways, bicyclist should always ride with traffic on the right side of the road. Unless the road is clear, bicyclists should ride single file.

II. RECOMMENDATIONS

A. OVERVIEW

After studying existing conditions in the field and with the local residents, the BRPD Team developed a list of possible bicycle and/or pedestrian improvements to enhance mobility between the Village Center, the Community School, the Lincoln Sports Fields and Town Forest and address the other issues raised by the community. The ***Task E Summary – Potential Alternatives***, in **Appendix B** describes these alternatives in detail. Starting with these alternatives, the project team refined them to a shorter list of feasible options. The community reviewed and evaluated this shorter list, resulting in the final list of recommendations included here.

Based on the results of the community and professional review of the alternatives, three separate types of recommendations emerged:

- Short term road improvements,
- Long term road improvements, and

- Long term, off-road trail development.

Figure 2 shows the location of these recommendations and **Table 1** provides information on their characteristics and potential impacts.

The short term improvements are those that the Town could undertake rather quickly to improve existing bicycling and walking conditions on East River Road with relatively little cost or additional maintenance commitments.

The long term road improvements involve more substantial changes to the roadway to create even better conditions for walking and bicycling. They would involve more substantial costs but no significant increase in long term maintenance costs. They could be implemented over time in sections or all at once.

The long term, off-road trail development includes recommendations for several different pedestrian trails within the study area. Some of these trails would be best developed by the Town but others could more easily be developed by a support group, private trails organization, neighbors working together or some other non-town entity.

B. RECOMMENDED ACTIONS

1. SHORT TERM ROAD IMPROVEMENTS

RECOMMENDATION S1: RESTRIPING, SIGNAGE AND TRAFFIC CALMING

This recommendation includes the restriping of the existing road to create two nine-foot wide travel lanes each with two-foot wide paved shoulders. The narrower travel lanes would help to induce slower vehicular traffic speeds and the shoulders would provide minimal space for pedestrians. It also consists of installing “Share the Road” and “Bicycle Route” signs on East River Road, as well as other signs warning motorists to the presence of pedestrians and bicyclists on the road. Street trees would be planted at appropriate locations along the road to start the process of creating a narrower overall corridor for the roadway, which will also assist in slowing traffic. The trees would be located so as not to block sight lines at intersections and selected so that the overall growth habits did not create future conflicts with overhead utility lines.

RECOMMENDATION S2: CULVERT RESTRIPING

This recommendation consists of adding road striping to the edges of the existing pavement creating two nine-foot wide travel lanes with a one-foot shoulder on either side. “Narrow Bridge” and “Watch for Pedestrians and Bicyclists” signs would be placed along the roadway at appropriate distances from the box culvert to warn approaching vehicles of the narrower pavement.

RECOMMENDATION S3: PEDESTRIAN ZONE IN VILLAGE

This recommendation would create a pedestrian zone from in front of the United Church on West River Road to just to the south of the entrance to the Burnham Hall parking area on East River Road. A pedestrian zone is a designation on a roadway in which pedestrians are to be expected crossing the road and in which they have the right of way when they do so. There are typically no specifically marked crosswalks within the pedestrian zone, just signage at either end and in the middle notifying motorists of the presence of pedestrians crossing the road.

2. LONG TERM ROAD IMPROVEMENTS

RECOMMENDATION L1: GOVE HILL STREET BRIDGE MODIFICATIONS

Recommendation L1 includes the reconstruction of the sidewalk on the southern side of the Gove Hill Road bridge to shift the location where the bridge sidewalk meets the grade of the main bridge closer to the main, straight portion of the bridge. This would allow more convenient pedestrian access for those pedestrians reaching the bridge by crossing either East River Road on the east side or Gove Hill Road on the west side of the bridge. **Figure 3** provides a sketch of the proposed modifications. This work could be done in conjunction with the implementation of the final recommendations of the Village Study, with the slight modification of the proposed crosswalk on East River Road further north to be more in line with the modified sidewalk on the Gove Hill Bridge and the proposed sidewalk on Quaker Street.

RECOMMENDATION L2: BOX CULVERT REPLACEMENT

This recommendation includes the complete replacement of the existing box culvert approximately 750 feet northwest of the Truchon Bridge with a wider one that would accommodate wider travel lanes and paved shoulders for bicycle and pedestrian movement.

RECOMMENDATION L3: ROAD WIDENING ONE FOOT (NORTH)

Recommendation L3 includes widening East River Road by one foot on either side between the southern end of the existing sidewalk and Community School. The road would be striped to create two nine-foot wide travel lanes, each with three-foot wide shoulders. The narrower travel lanes would help to induce slower vehicular traffic speeds and the shoulders would provide minimal space for pedestrians. While the widening should typically be done equally on both sides of the road, there are a few sections where the widening could be shifted to just one side to avoid impacting trees, utilities, or steep slopes. **Figure 6** highlights these areas.

RECOMMENDATION L4: PEDESTRIAN ZONE BY SCHOOL

This recommendation would create a pedestrian zone in front of the school entrance. This pedestrian zone would allow children walking to school from the village to cross East River Road within a designated crossing area as soon as they reach the school entrance, while also letting the smaller children that cross the road to and from the preschool to cross the road as

soon as they reach it at the southern end of the school entrance area. Alternately, Lincoln could maintain two crosswalks in this area, one at the north end of the school entrance and one at the south end. (See Recommendation S3 for a description of a Pedestrian Zone.)

RECOMMENDATION L5 - ONE SIDED WIDENING

Recommendation L5 would widen the west side of the roadway by two feet from the end of the Burnham Hall on street parking to opposite the southern end of the existing sidewalk on the east side of East River Road. The road would not be widened on the east side where the existing curb and sidewalk define the edge of the road. The road would be striped to create two nine-foot wide travel lanes, each with three-foot wide shoulders.

RECOMMENDATION L6: ROAD WIDENING ONE FOOT (SOUTH)

Recommendation L6 includes widening East River Road by one foot on either side between the Community School and the Garland Bridge. The road would be striped to create two nine-foot wide travel lanes, each with three-foot wide shoulders. The narrower travel lanes would help to induce slower vehicular traffic speeds and the shoulders would provide minimal space for pedestrians.

3. LONG TERM TRAIL IMPROVEMENTS

RECOMMENDATION T1: SCHOOL TO LINCOLN SPORTS FIELDS TRAIL

Recommendation T1 would create a trail that begins at the intersection of Gove Hill and Clark Roads, using Clark Road south from the intersection. The actual trail portion would head south from the south end of Clark Road, following an existing old forest road across the Bernstein property, to a point on or close to the location where it crosses from the Bernstein property to the Mangione property. The trail generally follows the Mangione eastern property line south until it crosses onto the southwestern corner of the Westbrook property. The trail would follow the southern property line of the Westbrook property east to the corner with the Gemignani property. At the corners of the Westbrook and Gemignani properties, the trail would cross onto the Gemignani property and continue to the east, following the northern property line. The trail would include several small switchbacks along this property line as needed to help reduce the grade of the trail and to eliminate the potential for erosion on the trail. It would circle around the residence close to the road to the east of the Gemignani property and join the driveway which would take the trail down to East River road.

This trail would most likely best be developed by an entity other than the Town because it could be considered a recreational trail more than a transportation trail.

RECOMMENDATION T2: SCHOOL TO TOWN FOREST TRAIL

Recommendation T2 would be an extension of the existing trail on the southern end of the school property. It would continue to head south towards the steep access road that provides

access between this low field and East River Road. The trail would continue eastward on the north side of the guardrail along East River Road. At the Garland Bridge close to South Lincoln Road, the trail would cross East River Road just west of the Garland Bridge and cross the river via a new pedestrian walkway cantilevered from the south side of the Garland Bridge. The trail would then cross South Lincoln Road. The radius between Lincoln Gap Road and South Lincoln Road would be reduced, as possible to reduce the crossing distance for pedestrians and to create a more “tee-like” road intersection, slowing traffic.

The trail would enter the Thompson property on the east side of South Lincoln Road at the intersection of South Lincoln and Lincoln Gap Roads. It would head southeast for a short distance and then cross, via a small footbridge, an intermittent stream that drains the meadow to the east. The trail would continue along the route of an existing foot path through the small forest along the east side of South Lincoln Road. At the field access drive from South Lincoln Road, the path shifts to the western edge of the field and continues wrapping around the west side and then the south side of the meadow to enter the Town Forest property to the east of the Town garage.

This trail could be developed by the Town because its primary purpose would be the movement of students between the school and the Town Forest.

RECOMMENDATION T3: LINCOLN SPORTS FIELD ACCESS TRAIL

Recommendation T3 would create a defined trail or small shared use path from the south end of the Gove Hill Bridge to the Lincoln Sports Field. It would cross the Fire Department property (listed as Town Property) on the northern side of the parking area. The implementation of the trail could also include the relocation of the existing barbecue area further from the New Haven River, to allow the trail to go between the two. This alternative would also include the installation of at least one bicycle rack near the Lincoln Sports Field.

4. BRIDGE WIDENING

No matter what alternatives are supported by the community, the upgrade of the Truchon Bridge would include at least four foot paved shoulders on both sides of the travel way, due to the restrictions to the edge of the shoulders by the bridge railings.

C. VIABILITY

1. AMERICANS WITH DISABILITIES ACT REGULATIONS

The improvements proposed along the roadway need to fully comply with the requirements of the Americans with Disabilities Act (ADA). Since the improvements along the roadway are going to be actual expansions of the roadway itself, ADA allows the improvements to be at the same grade as the roadway. The widths are not directly regulated since they are facilities that are shared with the motorists. The *Vermont Pedestrian and Bicycle Facility Planning and Design Manual* (the Manual) recommends that shoulder widths should follow the recommendations of the *Vermont State Standards*. The *Vermont State Standards* recommend that local roads such as

East River Road, with speed limits of 30 mph and Average Daily Traffic levels of between 400 and 1,500 vehicles, the shoulders should be a minimum of two-foot wide with nine-foot travel lanes.

The narrower trails can be constructed without meeting the width and slope requirements of wider paved non-motorized facilities. This could be changing the next few months as the Federal government is finalizing regulations for off road facilities. Consequently, these trails can have steep sections and be relatively narrow but they would not meet the goal of providing accessible mobility to all pedestrians and bicyclists in and through the Study Area.

2. NINE-FOOT WIDE TRAVEL LANES

Striping East River Road with two nine-foot wide travel lanes will not reduce the overall amount of pavement available for use by the heavy logging trucks that use the road. It will provide notification to their drivers as well as to other motorists on the road as to where they are expected to be. If needed on tighter curves, the wider roadway beyond the striping will still be available for momentary use.

Striping is only temporary on roadways and needs to be periodically renewed. This provides the opportunity to revisit the effectiveness of the nine-foot lanes in the future and to revert to ten-foot wide travel lanes with one or two foot wide shoulders, depending on whether the road widening has been undertaken.

3. PEDESTRIAN/MOUNTAIN BIKE TRAILS

The trails envisioned in the recommendations are relatively narrow trails with natural surfaces. When constructed correctly, these trails are well suited for pedestrians or mountain bikes and have almost no impacts on their surroundings. They are constructed to work with the topography and require almost no grading work. These trails are typically about 18 to 24 inches wide, but can be made wider if needed. Their narrow width and integration into existing forests with narrow clearances make it difficult (but not impossible) to travel them on four wheel all terrain vehicles.

There are several sources that provide detailed information on trail construction and management, including:

- *Trails for the Twenty-First Century*; Flink, Olka and Searns; 2001.
- *Trail Solutions: IMBA's Guide to Building Sweet Singletrack*; Webber; 2004.
- *Trail Planning, Design and Development Guidelines*; Minnesota Department of Natural Resources.

The Vermont Mountain Bike Association may also be a good source of additional information on constructing and maintaining the proposed trails.

4. TRAIL EASEMENTS

In order to proceed with the implementation of the trails, the Town, Lincoln Sports, or some other group will most likely need to secure easements from property owners. Having an actual easement for the trail ensures that the trail can continue to exist even when properties change hands. It also defines the location of the trail and any conditions that may be needed or desired pertaining to maintenance, width, base material, lighting and other aspects of the construction and management of the trail.

5. ROAD WIDENING

For most of the length of East River Road between Burnham Hall and the Community School, the road has a gravel shoulder that is at least 6 inches wide if not wider. Adding a foot to either side of the road will use this gravel shoulder and the small adjacent space next to it. As part of the widening, the gravel shoulders should be extended at least one foot beyond the edge of the pavement if room exists and there will be no impacts to adjacent properties or important features. These shoulders provide a buffer along the edges of the road for pedestrian and even bicyclists in emergencies when motorists do not obey the rules of the road and come too close to the non-motorized users. The gravel shoulders also provide a similar margin of safety for the motorists themselves during emergency or tight situations. The BRPD Team and the ACRPC are not aware of local or State requirements for adding any prescribed minimum width of adjacent gravel shoulder when upgrading or widening an existing road.

In adding width to East River Road, the construction needs to be done carefully to minimize future differential settling between the main road and the widened paved shoulder. There needs to be an adequate base under the widened shoulder.

In a few locations, it may be advisable to do most of the widening on one side, so that the pavement would extend two feet beyond the edge of the existing pavement on one side of the road with no extensions on the other side. This would shift the centerline of the road approximately one foot off its current alignment. When this is determined to be needed to minimize or avoid impacts to adjacent features, the current centerline needs to be documented before it is shifted to preserve the limits of the right-of-way.

6. RIGHT-OF-WAY

The current information that our team has obtained about rights-of-way is that when a right-of-way has not been clearly established in the land records, it is assumed to be three rods wide (49.5 feet), centered on the existing roadway. It is the BRPD Team's understanding that this is the case regardless of what adjoining property deeds state.

7. VILLAGE CHARACTER

The center of Lincoln has a small village character that, in part, is created by the relationship of the residences and other structures to the roadway and each other, as well as the overall look

and feel of the rural road. In many cases, the road already has a one to two foot gravel shoulder.

The widening of the roadway by a total of two feet should not affect this overall relationship. It represents a slightly less than 10 percent widening of the roadway. This widening will not be perceived as a significant change by most users, residents or visitors. The widening will not require the removal of trees or the relocation of most of the utility poles along the edges of the roadway.

The recommendations for additional street trees will have a positive effect on the overall character of the village center. Over time, they will also help to slow motor vehicle speeds in the village area.

III. EXISTING CONDITIONS

A. LAND USE

1. LAND USE TYPES

The Study Area is a mix of small commercial and residential uses, with a greater concentration of the commercial uses in the Village Center. There are also public land uses distributed throughout the Study Area. **Figure 4** shows the general distribution of the various types of land uses in the Study Area.

2. DESTINATIONS

Several of the commercial and public land uses are obvious destinations for bicycle and pedestrian travel within the Study Area. It is also assumed that the residential uses are potential origin and/or destination points for bicyclists and pedestrians. **Figure 4** also highlights these destination points in the Study Area.

B. TRANSPORTATION FACILITIES

1. OVERVIEW

While the Study Area is centered on East River Road, there are several other roads within the Study Area that could be relevant to the improvement of walking and bicycling conditions. **Figure 4** identifies the roadways in the Study Area.

2. ROADWAY FUNCTIONAL CLASSIFICATIONS

East River Road serves as the main road (Town Highway 1) through the village of Lincoln from Gove Hill Road to the east side of Garland Bridge (Bridge #17). On the east side of Garland Bridge, East River Road becomes Lincoln Gap Road. The small section of road

between Garland Bridge and the intersection with South Lincoln Road is still considered Town Highway 1. South Lincoln Road becomes Town Highway 1 at the intersection of Lincoln Gap Road and South Lincoln Road. East of the intersection with South Lincoln Road, Lincoln Gap Road is Town Highway 2. Both East River Road and South Lincoln Road are Class 2 major collectors.

3. ROADWAY JURISDICTION

Both East River Road and South Lincoln Road are owned and maintained by the Town of Lincoln.

4. TRAFFIC VOLUMES

Automatic traffic recorder (ATR) counts maintained by the Vermont Agency of Transportation (VTrans) indicate that the average annual daily traffic (AADT) on West River Road at the Bristol/ Lincoln Town Line was 2,100 vehicles per day in 2007. On East River Road, 0.3 miles west of Bridge 19 (the Truchon Bridge), the AADT in 2007 was 1,300 vehicles per day. In 2007, 7.76% of the daily traffic through the village was composed of truck traffic with 6.55 % being medium size trucks and 1.21% heavy trucks.

5. ROADWAY WIDTHS / PAVEMENT CONDITIONS

The Town repaved East River Road in 2007 and it is still in good condition except for the pavement on the bridge over the New Haven River which was not repaved. Starting at the Quaker Street intersection the East River Road pavement width varies from 22 to 26 feet wide with 4-foot wide concrete sidewalks on both sides leading east. The sidewalk on the north side continues to the Old Hotel where the sidewalk ends. The sidewalk on the south side only extends for a short distance past the entrance to Burnham Hall. From the Old Hotel southeast to the intersection of South Lincoln Road, the pavement width is generally 22 feet wide with 1-2 foot wide gravel shoulders. The pavement on the Truchon Bridge over the New Haven River is 21 feet wide and in very poor condition; the pavement on Bridge 17, located just before South Lincoln Road, is 22 feet wide. Approximately 750 feet northwest of the Truchon Bridge is a box culvert where the pavement is only 20 feet wide.

Pavement on South Lincoln Road is in poor condition and has an average width of 22 feet with a faded double yellow centerline.

Gove Hill Road is a 22 foot wide paved road as it crosses Bridge 48 over the New Haven River. This bridge was reconstructed in 2009 at which time a 5 foot wide concrete sidewalk was constructed along the east side of the bridge.

Quaker Street has an average pavement width of 22 feet with a faded double yellow centerline.

The first 25 feet of Clark Road was paved as part of the bridge reconstruction project in 2009. The remaining 0.17 miles of Clark Road is a gravel road approximately 15 feet wide.

6. POSTED SPEED LIMIT

The posted speed limit on East River Road is 30 miles per hour through the project area. The speed limit remains 30 mph through the village. South Lincoln Road is posted at 35 mph.

7. GRADES

East River Road and South Lincoln Road are both relatively flat as they travel through Lincoln Village following along and crossing over the New Haven River. There are steep grades from the roadways down to the river in many sections throughout the project area.

8. RIGHT-OF-WAY WIDTHS

The existing right-of-way widths for East River Road, South Lincoln Road, Quaker Street, Clark Road and Gove Hill Road are assumed to be 49.5 ft wide (3 rods) based on Vermont State Statutes. Central Vermont Power (CVP) researched the right of way widths a few years ago when it replaced its utility poles in the Town. Town officials indicated that CVP told them that they placed their utility poles at the outer edge of what their research indicated the right – of-way to be.

9. CRASH HISTORY

Very few accidents have been reported to VTrans along East River Road and South Lincoln Road. No crashes were reported from 2006 to 2009. One single vehicle crash was reported in 2005 at the intersection of South Lincoln Road and East River Road. The driver was going too fast for conditions and one injury was reported. Another crash at the same location was reported in 2000 with no injuries, due to a failure to yield the right-of-way.

C. UTILITIES

All of the roadways in the project area have utility poles with overhead lines located along them. In many cases the utility poles switch from one side of the road to the other. The utility poles are generally located at the outer edges of the roadway right-of-ways when they are located in the right-of-way.

There are no community sewer or water systems in Lincoln.

There is a septic system leach field close to the road directly south of the Truchon Bridge on the west side of East River Road.

D. NATURAL RESOURCES

1. WATERCOURSES

The New Haven River runs along East River Road heading south from the village area, first along the west side and then the east side. The road crosses the River via the Truchon Bridge (Bridge #19) southeast of the Village and Garland Bridge just before the South Lincoln Road intersection. There is an unnamed stream that crosses under East River Road through a box culvert located approximately 750 feet northwest of the Truchon Bridge. There is also an intermittent stream that crosses under East River Road just to the northwest of the entrance to the Community School. Another smaller intermittent stream passes under East River Road via a small culvert approximately 50 feet south of the Truchon Bridge.

A small intermittent stream passes under South Lincoln Road via a metal culvert just south of the intersection with East River Road.

Figure 5 shows the location of the streams discussed in this section.

2. TOPOGRAPHY

The Study Area runs along the valley of the New Haven River. East River Road runs along the sides of the river at approximately the same relative elevation with just a few rises and dips. The land drops off significantly towards the River along its banks, which are often close to the edge of East River Road. The land also rises significantly to the east of the Road in the proximity of the School. **Figure 5** includes existing ground contours at a 20 foot interval showing the general topography in the study area.

3. WETLANDS

There are very few wetlands mapped in the study area. **Figure 5** shows the location of the few mapped wetlands in the study area. The largest wetland areas lie directly along the New Haven River. Other smaller wetland areas are located on the east side of South Lincoln Road.

4. WATERBODIES

There are no significant water bodies within the Study Area.

5. FLOODPLAINS

The floodplain for the New Haven River lies on either side of the river as it runs northwest through the Study Area. **Figure 4** shows the approximate extent of the floodplain in the study area as represented by the limits of the River Overlay Zoning District. Most of the Village Center lies within the New Haven River floodplain.

6. FLORA

The study area is a mix of agricultural fields and forests outside of the areas close into the Village Center. The photographic base of **Figure 5** shows the location of these fields and forest. The developed areas in the village include a variety of vegetation, most of it planted at some point in time as a component of the development process.

There are no important vegetative habitat areas identified within the study area.

There are several larger trees close to the side of the East River Road that provide shade and help to define the character of the roadway. Removal of these trees should be done only after careful consideration of the impacts on adjacent properties and nature of the roadway.

7. FAUNA

The Study Area contains a collection of agricultural/rural Vermont fauna, including deer, bobcats, smaller mammals, turkeys, song birds, hawks, owls, ducks, geese, coyotes, foxes, frogs, toads, and snakes. The relatively large forested areas in and close to the Study Area make it likely that other animal species that require large undisturbed tracts of forest land habitat could also be found within the Study Area. The New Haven River is also assumed to contain habitats for several fish species.

There are no critical wildlife habitat areas identified by the State within the study area.

8. ENDANGERED SPECIES

The Vermont Nongame and Natural Heritage Program had not identified rare, threatened or endangered species within the study area.

E. CULTURAL RESOURCES

1. HISTORIC ABOVEGROUND RESOURCES

Several historic resources lining East River Road, including commercial and civic buildings, residences, barns, walls, remnants, and other features, could potentially be impacted by significant changes to the existing roadway due to their close proximity to the edge of the existing roadway pavement. **Appendix D** includes more information on which specific structures need to be considered for potential impacts as pavement widening is one of the potential alternatives.

2. ARCHEOLOGICAL

Archeological resources in Vermont have typically been located on higher ground located adjacent to waterways. Unless these areas have been significantly disturbed, such as in close proximity to East River Road or directly around an existing structure, it is expected that these resources may still be present.

3. OPEN SPACE AND PUBLIC LANDS

The Town or School District owns several public open spaces within the study area, including the Lincoln Elementary School and the Town Forest. Other public spaces are owned by private not-for-profit corporations with a public mission, including the Lincoln Sports Fields on Gove Hill Road, the Library and adjacent open land, the Lincoln Preschool, Burnham Hall and the United Church. Each of these is a destination for pedestrians and bicyclists within the Study Area. There are also several other areas along the New Haven River that are used for swimming and are considered to be public destinations within the study area, as **Figure 4** shows.

4. AGRICULTURAL LANDS

There are several significant parcels of agricultural land in active use within the Study Area. **Figure 4** shows the general location of the agricultural land uses.

F. PLANNING DOCUMENTS

1. TOWN PLANS

Numerous portions of the *Lincoln Town Plan*, adopted by the Lincoln Selectboard, June 1, 2010 are relevant to this study, either as conditions upon the development of alternatives, or as direct support for the goals of the project. **Appendix E** highlights those portions of the Town Plan that are important to this study.

The Transportation section of the plan includes one goal: to “increase pedestrian and bicycle safety”. The strategies for implementing this goal include:

- Establishing additional parking for village commerce and carpooling
- Studying the feasibility of expanding village sidewalks/bike paths to connect the library, ballfields, school, Town Clerk’s office and Village Districts
- Limiting accesses and driveways when possible, sharing with existing access points when feasible.
- Incorporating sidewalks and/or bikeways into road and right-of-way improvements.
- Applying for State and Federal funds available for these road, sidewalk, and bike path improvements.

2. TOWN ZONING

The Lincoln Zoning Regulations are generally silent on potential improvements for bicycling and walking, although there are certain provisions that could be interpreted as limiting such facilities in certain situations. Much of the Study Area along East River Road lies either in a Flood Hazard Area or the River Overlay Area. Development or improvements in the Flood Hazard Area that require fill from outside of the Area or transportation facilities would be conditional uses in Flood Hazard Areas. Recreational trails are allowed in the Flood Hazard Area, as long as they do not require outside fill.

Bridges are the only things that are allowed within 25 feet of a river in the River Overlay Area.

3. STATE PLANS

The 2008 VTrans Pedestrian and Bicycle Policy Plan includes goals and objectives that directly support the upgrading of bicycling and walking connections between the Village Center and the Community School, including:

Goals

- Cultural Environment. Enhance the human scale and livability of Vermont's communities by improving opportunities for pedestrian and bicycle mobility and access in and between towns, downtowns, villages and rural landscapes.
- Health. Improve the health of Vermonters and reduce health care costs by making it easier, safer and more convenient for citizens to be more physically active by walking and bicycling on a regular basis.
- Transportation Choice. Enhance pedestrian and bicycle transportation options in Vermont so that citizens, regardless of location, socioeconomic status, or health can choose a seamless, convenient and comfortable mode that meets their needs. Promote a transportation network, including roadways, shared use paths, rail trails, rails with trails, and accessible pedestrian facilities, which allow pedestrians and bicyclists to reach their destinations throughout the State or to connect to other modes of travel.

Objectives

- Objective 8. Work with citizens, municipalities, regional planning organizations, and other State agencies to develop, plan, and implement pedestrian and bicycle plans, projects, and programs.
- Objective 12. Provide a seamless transportation network for pedestrians and bicyclists by improving linkages between walking, bicycling and other modes of transportation

4. SPECIAL REPORTS OR PROJECTS

Truchon Bridge

Consultants are working with VTrans to design a replacement for the "Truchon" Bridge on East River Road. This work is in its early stages and no plans have yet been developed.

Village Center Study

Summit Engineering prepared a study for the Town on improving pedestrian, bicyclist and motor vehicle safety in and around the center of the village. The study focused on the

intersection of Quaker Street, East and West River Roads and Gove Hill Road. The final recommendation of the plan called for the redevelopment of the intersection into a modified T intersection with new stops signs, sidewalks and crosswalks. The recommendation was endorsed by the Town Selectboard and the ACRPC, but no improvements to the intersection have been completed to date.

Appendix F contains a copy of the project report.

IV. POTENTIAL IMPACTS OF THE PROPOSED RECOMMENDATIONS

A. LAND USE

No impacts to land uses are anticipated as a result of the proposed recommendations.

The distance between the top of the river bank and the edge of the roadway needs to be verified. Initial measurements using the data available for this study show that the roadway is approximately 30 feet away. The River Overlay District restriction on development within 25 feet of the top of the bank will need to be part of the consideration for the proposed widening.

The Floodplain District in the zoning ordinance will also limit how much fill can be placed on the river side of East River Road, because the limit of the floodplain is often at the edge of the road.

Trails are allowed uses within the Floodplain District.

B. TRANSPORTATION FACILITIES

The proposed short term modifications should have minimal impacts to the roadway themselves, with the exception that fewer repairs to the guard rails due to vehicle crashes could result from the additional signage and restriping near the narrow box culvert. It is anticipated that the overall speed of the vehicles traveling East River Road will be reduced.

The long term recommendations will obviously widen the roadway itself. There would be no significant change to the road due to the addition of either pedestrian zone.

No additional right-of-way should be needed for the implementation of either the short term or long term roadway upgrades.

The construction of the trails would need easements or rights-of-way be granted to either Lincoln, the entity that sponsors the development of the trail or both.

The construction of the School to Town Forest Trail will also necessitate the addition of a pedestrian bridge cantilevered on the south side of the Garland Bridge and the addition of two crosswalks, one on East River Road west of the bridge and one on South Lincoln Road.

C. UTILITIES

The restriping and additional signage should have no impact on existing utilities. As long as tree planting is done with the mature size of the trees and their potential impacts on utility lines taken into consideration, the new street trees should also have no impact on existing utilities.

The road widening will require the relocation of four utility poles as **Figure 6** highlights. The widening by itself will most likely not impact the existing storm water drains that lead under the road and no unmanageable increase in the amount of storm water runoff is expected. It may be a good opportunity to check their overall structural soundness and to reconstruct them as needed in conjunction with the road widening.

D. NATURAL RESOURCES

1. WATERCOURSES

No impact to the New Haven River is anticipated as a result of the implementation of either the short or long term recommendations.

The trails will need to navigate several smaller stream crossings. These crossings will need small pedestrian bridges to minimize impacts to the streams of foot traffic and other disturbances.

2. TOPOGRAPHY

No impacts to or from topography are anticipated with the implementation of the road widening recommendations although short retaining walls or reconstructed slopes may be required in just a few places.

The construction of the trails will need to follow best practice recommendations for trail construction to eliminate subsequent erosion or sedimentation problems that can occur with poorly aligned or constructed trails. **Appendix D** contains additional information on proper trail construction. The most important portion of this information relative to topography is the elimination of direct long downhill runs that can gather and channel storm water. The switchbacks included in the long School to the Lincoln Sports Fields Trail are meant to reduce the overall grade of the trail and to assist in limiting erosion problems.

3. WETLANDS

No impacts to wetland should occur as a result of the construction of the road widening recommendation. The construction of the trails should also have no significant impacts to wetlands. It may be necessary to reroute the trails for short distances to avoid smaller wetland areas in the fields or it may be appropriate to construct boardwalks over wetland areas that are impossible to avoid due to topography or easement restrictions.

4. WATERBODIES

There should be no impacts to waterbodies as a result of the implementation of the short or long term recommendations.

5. FLOODPLAINS

The short and long term road improvement recommendations occur outside of the floodplain and should have no impact on future flood conveyances. Portions of the School to Town Forest trail as well as the short Lincoln Sports Fields Trail would be constructed in the floodplain. The trails themselves should have no impact on the floodplain capacity. The small foot bridges are anticipated to be needed only outside of the limits of the floodplain. The trail should be designed and constructed so as to minimize impacts of flooding on the trails themselves, including the use of natural, compacted mineral soils for the trail surface.

6. FLORA

The road improvement recommendations should have no negative impacts on flora in the study area. The trails are also not anticipated to have significant impacts on local flora.

7. FAUNA

The road improvement recommendations should have no negative impacts on fauna in the study area. Construction or use of the trails are also not anticipated to have significant impacts on local fauna because of the general proximity of residences to the forested areas through which the trails are recommended which have already introduced people and pets into the area.

8. ENDANGERED SPECIES

There should be no impacts on rare, threatened or endangered species as a result of the implementation of the recommendations.

E. CULTURAL RESOURCES

1. HISTORIC ABOVEGROUND RESOURCES

There should be no impacts on aboveground historic resources as a result of the development of the recommendations. Resources include commercial and civic buildings, residences, barns, walls, remnants, and other features. The road widening will bring the edge of the road slightly closer to the lower stone retaining wall near the road north of the Truchon Bridge, but the wall itself should remain untouched.

2. ARCHEOLOGICAL

The road widening work should have no impact on archeological resources due to the limited depth of the construction and the previous disturbances along the edges of the road.

The replacement of the box culvert could potentially disturb archeological resources and a more detailed study of the area should be completed before the work starts.

The construction of portions of the trails could also have a potential impact on archeological resources and a more detailed Archeological Resource Assessment or a Phase 2 study should be undertaken for the southern portion of the School to Town Forest trail as it crosses the Thompson property and the School to Lincoln Sports Fields Trail as it crosses higher grounds adjacent to the New Haven River.

3. AGRICULTURAL LAND

The implementation of the portion of the School to Town Forest Trail could remove a small area of agricultural pasture from active use. The reduction is anticipated to be less than 0.05 acres.

F. PLANNING DOCUMENTS

The road widening and trail implementation are supported by the various relevant town and state plans.

The long term recommendations for modifying the Gove Hill Road Bridge and the creation of a pedestrian zone in the Village area slightly modify the preferred alternative in Village Center Study by eliminating the crosswalk in front of the Lincoln Store.

V. PHASING

The short term road improvements can and should be completed as soon as the Town is able to move ahead with them.

The long term road and trail recommendations can be pursued as funding becomes available for either type of facility. Of the four on-road recommendations, Recommendations L3 and L2, the road widening between the end of the sidewalk and the school along with the replacement of the box culvert, would be the most important to undertake, most likely at the same time. The other long term road recommendations can then be implemented in the order that makes the most sense at the time.

Long term trail recommendation T2 would be the most important trail to pursue. The other two trails could be implemented at some future time. If T3, the trail to the Lincoln Sports Field is not pursued in the short term, its alignment should still be considered when planning other modifications to the Fire Station parcel.

VI. INITIAL ESTIMATES OF PROBABLE CONSTRUCTION COSTS

Table 2 provides background information for the initial estimates of probable construction costs included in **Table 1**.

VII. IMPLEMENTATION

A. PROCEDURES

As a first step towards implementing the recommendations of this study, the Town Selectboard should accept and endorse the report. It will be difficult to proceed with the recommendations for the Town without this endorsement. Once the report is endorsed by the Town, the following steps can be undertaken, but not necessarily in the order listed here.

- Begin looking and applying for funding opportunities through grants, bonding, or other sources the Town considers appropriate.
- Factor road striping and signage into the Town budget.
- Keep the Town residents up to date on the process of implementing the recommendations.
- Work with the Town Highway Department and Road Foreman about long term maintenance of the road striping.
- Begin a street tree planting program funded by grants, Town budget, private donations or other appropriate sources.
- Hire a consultant to assist with the design of the widening of the roadway and/or the replacement of the box culvert and the permitting processes as funds are available.
- Coordinate the widening process with the bridge replacement process as possible.

Table 2: Initial Estimate of Probable Construction Cost

	UNIT	QUANTITY	UNIT PRICE	COST
S1 - East River Road Restriping and Signage				
New Striping to Narrow Travel Lanes	LF	8,320	\$5	\$41,600
New Signs	EA	20	\$100	\$2,000
New Trees	EA	25	\$400	\$10,000
Misc. Traffic Calming Improvements	LS	1	\$10,000	\$10,000
Total =				\$63,600
S2 - Restriping and Signage				
New Striping for Narrow Travel Lanes on the Bridge and Approachs	LF	100	\$5	\$500
Advance Warning Signs for Narrow Bridge	EA	4	\$100	\$400
Mob./ Demob., Traffic Control, Etc.	LS	1	\$600	\$600
Total =				\$1,500
S3 - Pedestrian Zone By Intersection				
Signage	EACH	6	\$100	\$600
L1 - Bridge Modifications (Gove Hill Road Bridge Work - Shift Ramp Locations)				
Concrete Curb	LF	60	\$45	\$2,700
5' Wide Concrete Sidewalk	LF	60	\$50	\$3,000
Truncated Domes	EA	2	\$400	\$800
Removal of Existing Curbing / Sidewalk	LF	65	\$20	\$1,300
Mob./ Demob., Traffic Control, Etc.	LS	1	\$1,500	\$1,500
Total =				\$9,300
L2 - Concrete Box Culvert Replacement				
30 Foot Concrete Box Culvert	LS	1	\$200,000	\$200,000
Install New Guardrail	LF	100	\$50	\$5,000
Mob./ Demob., Traffic Control, Etc.	LS	1	\$2,500	\$2,500
Total =				\$207,500
L3 - Road Widening One Foot & Striping (North)				
Both sides of 2,550 LF segment from Village to School	LF	5,100	\$20	\$102,000
L4 - Pedestrian Zone By School				
Signage	EACH	4	\$100	\$400
L5 - Road Widening One Foot & Striping One Side				
One side of 1,150 lf segment adjacent to existing sidewalk	LF	1,150	\$15	\$17,250
L6 - Road Widening One Foot & Striping (South)				
Both Sides of 1,610 lf segment from School to Garland Bridge	LF	3,220	\$20	\$64,400
T1 - School to Lincoln Sports Fields Trail				
Foot Path	LF	4,400	\$15	\$66,000
T2 - School to Town Forest Trail				
Foot Path	LF	2,030	\$15	\$30,450
T3 - Lincoln Sports Field Access Trail				
Gravel Path	LF	225	\$10	\$2,250

B. PERMITTING

The proposed project should not trigger the need to acquire a storm water discharge permit. Other than the permits needed to relocate four utility poles, Lincoln should not need other state permits to undertake the widening of the road by one foot on either side. A state stream alteration permit and state wetlands permit may be needed for the replacement of the culvert.

It does not appear that the construction of portions of the trails will need updates to existing Act 250 permits. The Town Clerk is not aware of any projects with an Act 250 permit in the Study area and there are none in the State Act250 Permit data base. The project sponsors may also need to obtain a State Wetland Permit and Water Quality Certification if the trail crosses wetlands or wetland buffer areas as well as a flood plain permit to construct the trails. They should not require a storm water discharge permit unless the disturbed area exceeds one acre.

C. FUNDING

The addition of the striping and signage in the short term improvements can most likely be funded directly by Lincoln through their regular roadway budget. The street tree planting program could be funded by individual community donations, grants from the Vermont Urban and Community Forestry Council or other environmental funding options.

Funding for the long term roadway and trail recommendations may be able to be secured from a variety of sources. Below is a list of various funding sources that could be used to help with the implementation of the road related recommendations, including:

- **Transportation Enhancement Program (TE Funds):** TE funds can be used to increase bicycle and pedestrian mobility, improve aesthetics along a roadway, or other projects that enhance the overall transportation experience. These funds will cover a maximum of 80 percent of the project with the remaining portions most likely coming from the project sponsoring organization. TE funds are distributed in Vermont through a competitive grant program.
- **Bicycle and Pedestrian Program:** These funds cover specific bicycle and pedestrian improvement projects and are also provided via a competitive grant program.
- **Safe Routes to School (SRTS Funds):** The SRTS program provides funds to improve physical connections to grade and middle schools that will increase the ability of students to walk or bicycle to school. These funds also cover training and encouragement programs meant to increase the incidence of school children walking and bicycling to school. These funds could be used to assist in the striping and road widening and possibly trail construction.
- **High Risk Rural Roads Program:** This program is meant to address specific safety issues on rural roads with low cost safety improvement projects to achieve significant reductions in traffic fatality and serious injury crashes. These locations for the use of these funds are recommended by the regional planning commissions. These funds may

be appropriate for the initial restriping and extra signage work on both the roadway and the box culvert crossing. The Town should work with the ACRPC and the TAC to access these funds since they are the group that recommends the projects to VTrans.

- Bikes Belong Grants: These grants are given by the Bikes Belong organization to improve bicycling conditions throughout the United States. The grants are for both facilities and advocacy. The grants for 2011 are by invitation only, but it may still be possible to be invited to submit a grant. Additional information can be found at: <http://www.bikesbelong.org/grants/apply-for-a-grant/who-can-apply/>.
- Town Roadway Improvement Class 2 paving funds are also available from VTrans and administered by the VTrans Districts. Lincoln is in District 5. Other forms of State aid to local communities may also be appropriate; additional information can be found in *The "Orange Book" a Handbook for Local Officials*.
- Vermont Urban and Community Forestry Grants: These grants are currently awarded yearly and can be used for tree inventory and tree planting programs. Typically, award for actually tree planting are given only after an inventory has been completed, but the recommendations in this report may potentially be substituted for a street tree inventory in the village area.

Other funding sources may be available for the construction of the trails, including:

- The federal Land & Water Conservation Fund administered by the Vermont Department of Forests, Parks, and Recreation;
- The federal Recreational Trails Program, administered by the Vermont Department of Forests, Parks, and Recreation;
- The Vermont Youth Conservation Corps work grants;
- Potential health grants promoting healthy living;
- The Robert Wood Johnson Foundation;
- MCI/Worldcom Royalty Donation Program (For this and several subsequent ideas, see <http://www.americantrails.org/resources/funding/TipsFund.html>);
- Clif Bar Sponsorship;
- Trail sponsorships (and possibly naming rights); and
- RockShox's Grants.

Other potential sources exist. Some additional resources that may provide insight into additional funds include:

<http://www.americantrails.org/resources/funding/Funding.html>,
<http://rlch.org/>, and
<http://atfiles.org/files/pdf/bicentennialsourcebook.pdf>.

Appendix G contains a more detailed table on the various federal funding sources that could be used for the road widening, the trails, signage and other elements that would help to make a more interesting and community enhancing project. The list in **Appendix G** is a general list and not all of the funding sources may be available for the particular recommendations of this report.

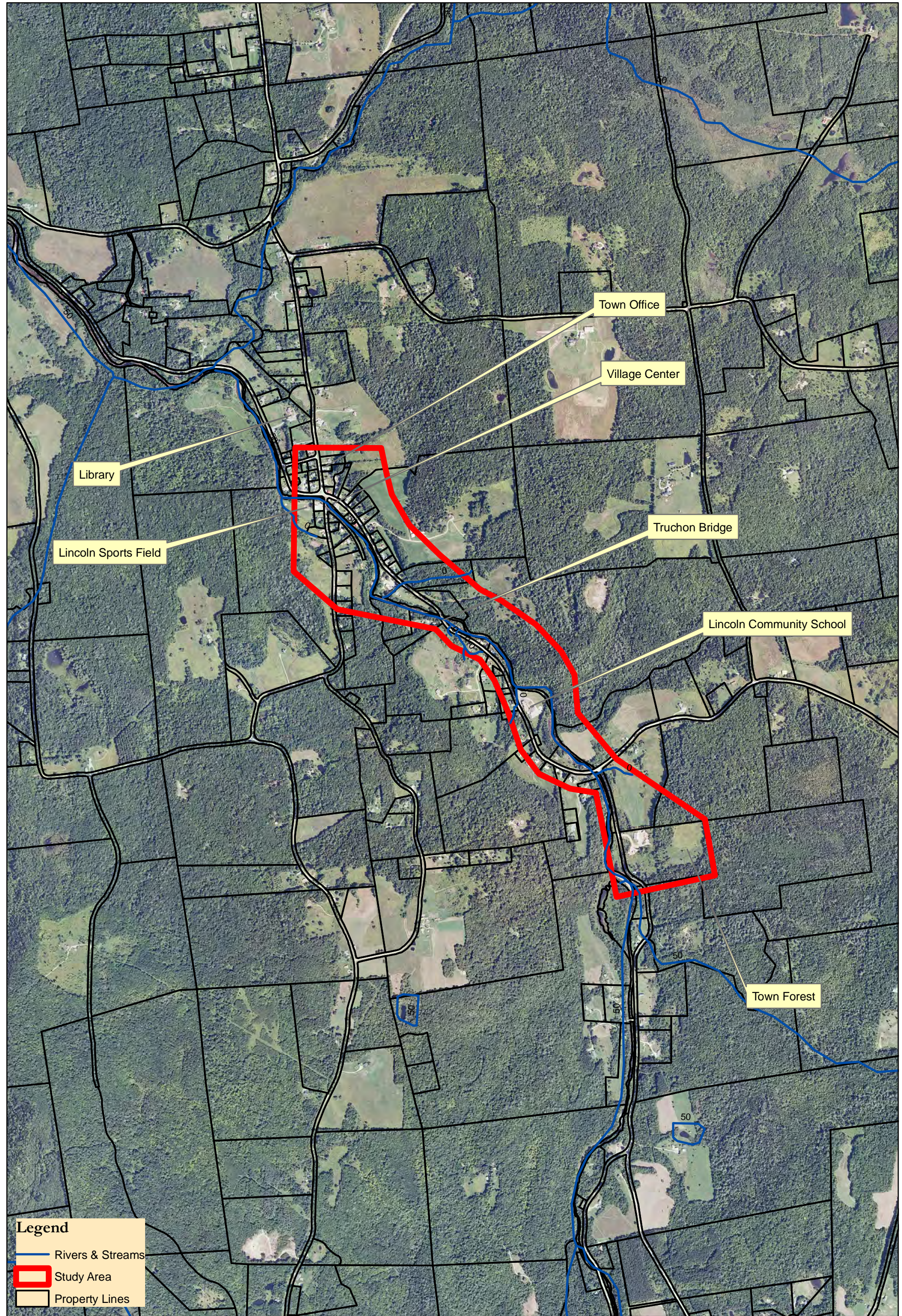
D. ADDITIONAL CONSIDERATIONS

1. ALIGNMENT RECONSIDERATIONS

The analysis of potential alignments for the School to Lincoln Sports Field Trail was unable to discover a possible alignment for the trail that could link to East River Road just to the south of the Truchon Bridge. Such a connection could possibly increase the use of the trail by school children going to or from school because it eliminates the need for several potentially strenuous inclines in the trail on the southern portion of the Bernstein property and further south. The Town or another group that may pursue development of this trail may want to re-examine the potential for a link to East River Road close to the Truchon Bridge to see if conditions may have changed that may make a connection easier to complete.

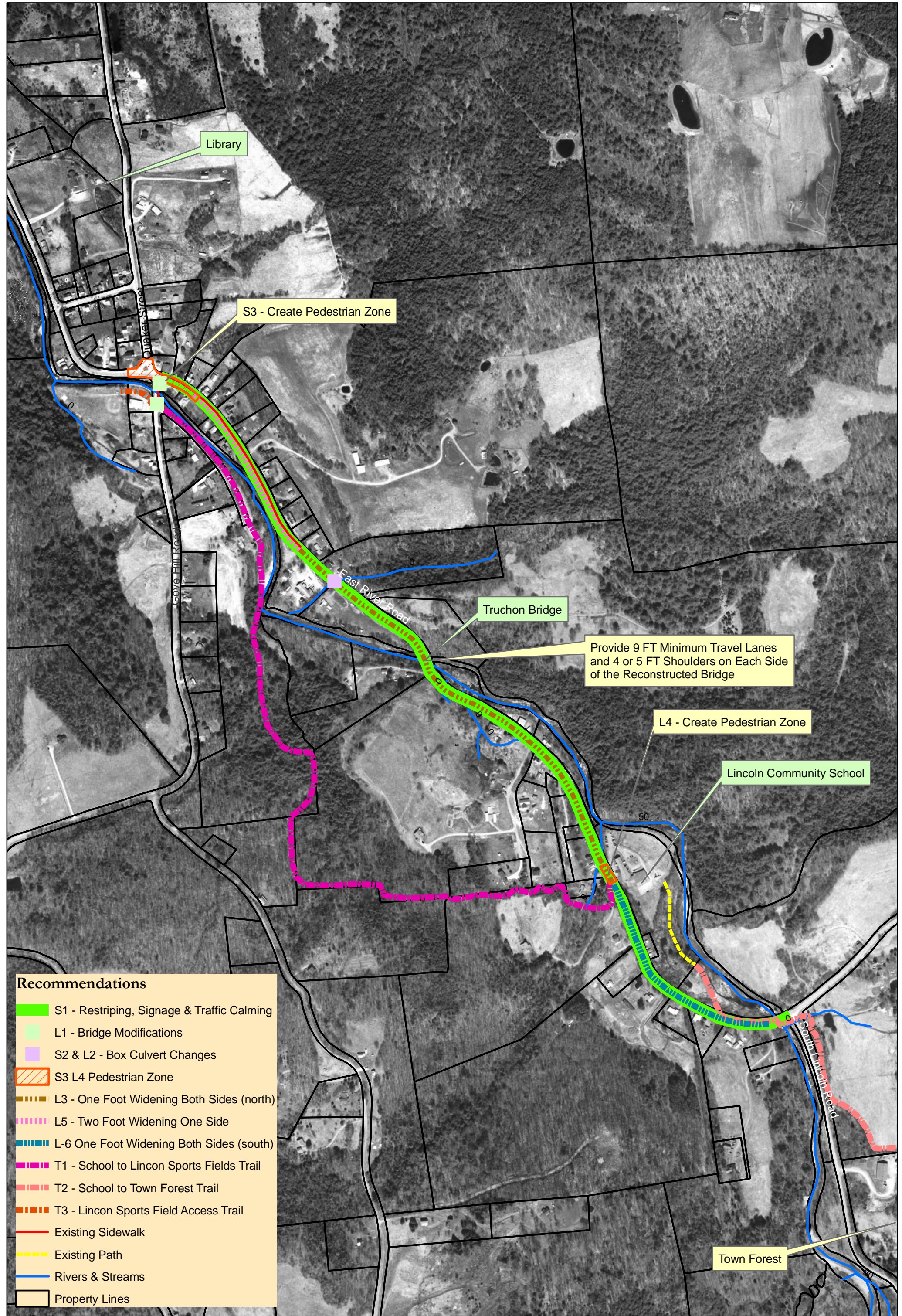
2. COMPLETE STREETS LEGISLATION

During the development of this study in 2011, the State of Vermont Legislature adapted a “Complete Streets” legislation (H198). This legislation mandates that state and locally managed transportation projects consider the safety and mobility of all transportation users regardless of age or ability, including bicyclists and pedestrians. The legislation does not specify to what level of detail or design the accommodation needs to be; this left to the project sponsors to determine. The legislation also stipulates that if it is determined that a specific transportation project cannot make this accommodation, the reasons need to be documented. The documentation process, as described in the legislation, is relatively simple and should not create additional financial burdens for the State or local municipalities. The legislation also excludes unpaved roads from complying with the “Complete Streets” requirements. The legislation does not require retrofitting of existing streets and roads unless there is new work being done on them.



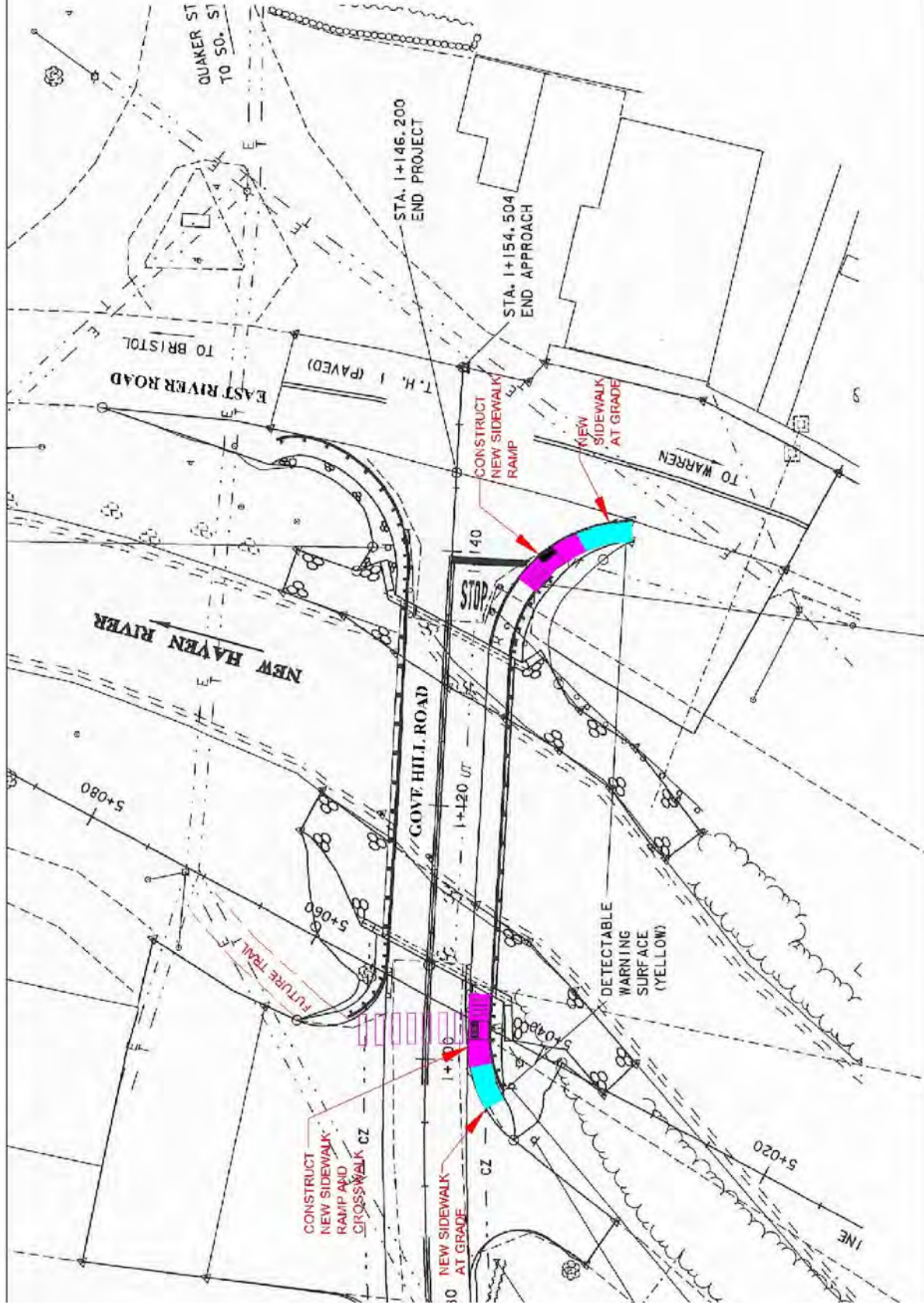
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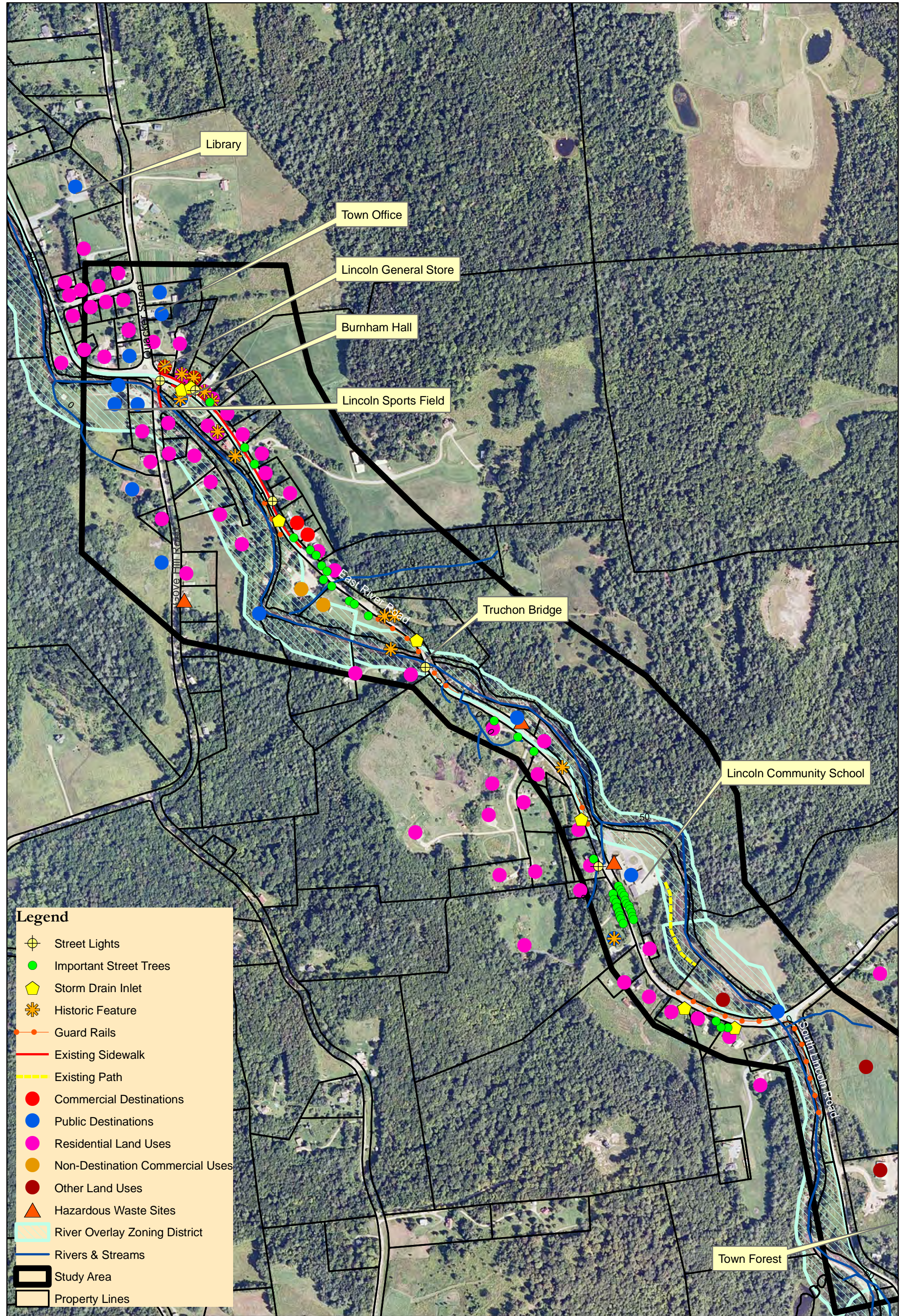
- Rivers & Streams
- Study Area
- Property Lines

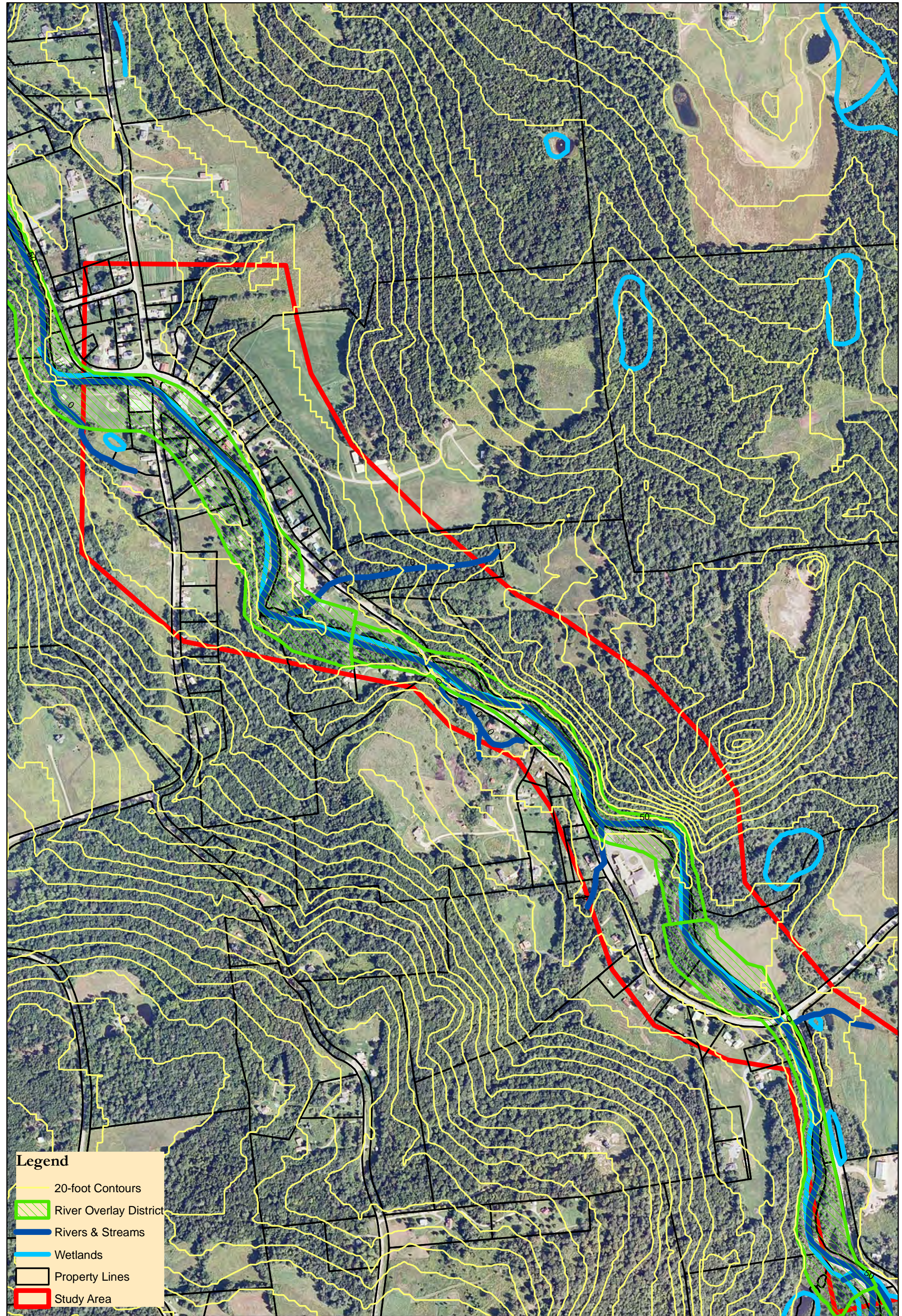


Recommendations

- S1 - Restriping, Signage & Traffic Calming
- L1 - Bridge Modifications
- S2 & L2 - Box Culvert Changes
- S3 L4 Pedestrian Zone
- L3 - One Foot Widening Both Sides (north)
- L5 - Two Foot Widening One Side
- L-6 One Foot Widening Both Sides (south)
- T1 - School to Lincon Sports Fields Trail
- T2 - School to Town Forest Trail
- T3 - Lincon Sports Field Access Trail
- Existing Sidewalk
- Existing Path
- Rivers & Streams
- Property Lines

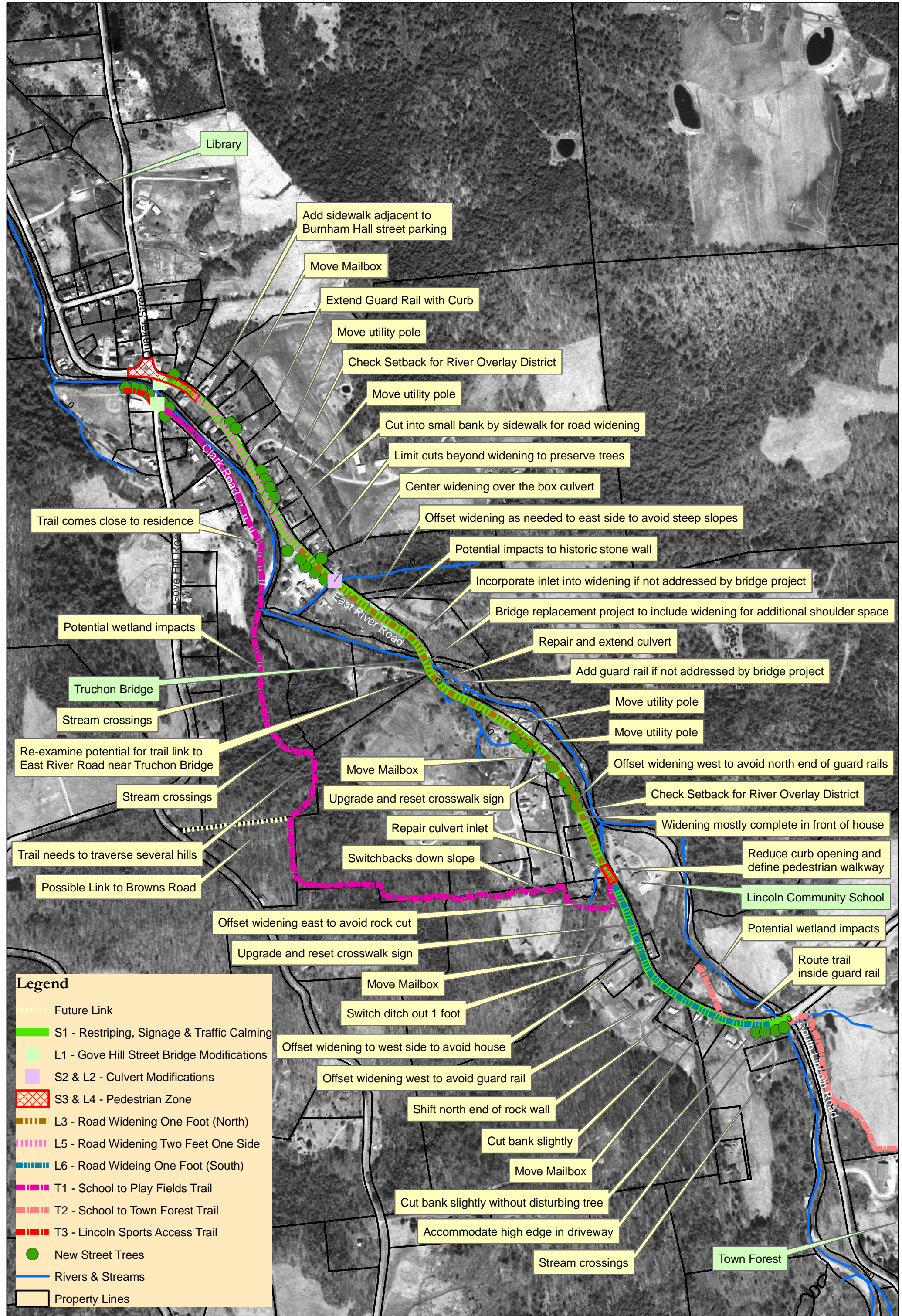






Legend

- 20-foot Contours
- River Overlay District
- Rivers & Streams
- Wetlands
- Property Lines
- Study Area



Appendix A

Study Process

STUDY PROCESS

To begin work on the Lincoln Bicycle/Pedestrian Planning & Feasibility Study, the Addison County Regional Planning Commission (ACRPC), in conjunction with the Town of Lincoln, contracted with a team lead by Broadreach Planning & Design to assist in the work, after a solicitation from qualified consultants. Broadreach Planning & Design (BRPD), along with Lamoureux & Dickinson and Heritage Landscapes, LLC, began the study by analyzing the existing conditions in the Study Area. They also met with a Project Steering Committee (PSC) to understand in more detail their concerns, questions and suggestions on where improvements might be located and what the issue associated with the improvements were. The initial work on understanding the existing conditions ended with a public work session used by the BRPD Team to verify its existing conditions and gather comments from the community on the proposed path.

After this initial work, the BRPD Team, along with assistance from the PSC developed a set of alternatives for improving bicycling and walking conditions after developing and examining over 20 different concepts for how better bicycling and walking could be provided. As part of the analysis work, the Team reviewed the potential impacts, benefits and potential for gaining necessary permits for the various alternatives. After further reviewing the alternatives with the PSC and refining them more, the BRPD Team assisted with a second public work session to review the alternatives and select the preferred improvements.

After the PSC confirmed the recommendations, the BRPD Team completed work on a draft report describing the existing conditions, the alternatives, and the preferred alignment of the trail. The BRPD Team presented this work at a third public work session to receive comments before finalizing the alignment and report.

Appendix B

Task E Summary – Potential Alternatives

**Addison County
Regional Planning Commission**
And
The Town of Lincoln

Bicycle & Pedestrian Planning & Feasibility Study
Task E Summary – Potential Alternatives



Submitted by:
Broadreach Planning & Design

In conjunction with
Lamoureux & Dickinson Consulting Engineers, Inc
Heritage Landscapes LLC.

May 12, 2011

A. OVERVIEW

The Addison County Regional Planning Commission (ACRPC) is assisting the Town of Lincoln with a pedestrian and bicycle feasibility study that is examining the most appropriate method of enhancing non-motorized travel between the center of Lincoln village and the Lincoln Community School and the local recreational fields. The project study area extends along both sides of East River Road for several hundred feet between the center of Lincoln and the Lincoln Town Forest. **Figure 2-1**, in the Task B memo, shows the approximate extent of the study area.

The report is formatted for double sided printing.

B. INITIAL LIST OF POTENTIAL ALTERNATIVES

After studying existing conditions in the field and with the local residents, the BRPD Team developed a list of possible bicycle and/or pedestrian improvements to enhance mobility between the Village Center and the Community School and address the issues. **Figure E-1** shows the location of the numerous different alternatives that were initially considered; **Attachment 1** includes a description of each alternatives. This list and accompanying figure served as the starting point for the development of a more refined list of viable alternative.

The potential alternatives shown on **Figure E-1** include numerous individual off road trails and shared use paths segments. The BRPD Team defined the segments to maximize flexibility in the ways in which they could be combined to create complete trails with appropriate beginning and ending points.

The BRPD Team's first review of the complete list of possible alternatives revealed significant, potentially insurmountable problems or impracticalities with several of them. These alternatives were eliminated in the first round of review. **Attachment 1** includes more information on the basis for these initial eliminations.

C. REFINED ALTERNATIVE REVIEW

During the second round of review, the BRPD Team examined the remaining alternatives in more detail to refine them in preparation for public discussion. **Figure E-2** shows the location of the refined alternatives, **Figure E-3** provides more information on the road widening alternatives and **Table E-1** presents an initial comparative review of the viable alternatives.

ALTERNATIVE A – ROAD RESTRIPIING, SIGNAGE AND TRAFFIC CALMING

This alternative includes the restriping of the road to create two nine-foot wide travel lanes each with two-foot wide paved shoulders. The narrower travel lanes would help to induce slower vehicular traffic speeds and the shoulders would provide minimal space for pedestrians. It also consists of installing "Share the Road" and "Bicycle Route" signs on East River Road, as well as other signs that indicate the presence of pedestrians and

bicyclists on the road to increase the awareness of motorists of the presence of bicyclists and pedestrians on the road. Street trees would be planted at appropriate locations along the road to start the process of creating a narrower overall corridor for the roadway, which will also assist in slowing traffic. The trees would be located so as not to block sight lines at intersections and would be selected so that the overall growth habits did not create future conflicts with overhead utility lines.

ALTERNATIVE B – BRIDGE MODIFICATIONS

Alternative A includes the reconstruction of the sidewalk on the southern side of the Gove Hill Road bridge to shift the location where the sidewalk meets the grade of the main bridge closer to the main, straight portion of the bridge, allowing for more convenient pedestrian access for those pedestrian reaching the bridge by crossing either East River Road on the east side or Gove Hill Road on the west side. **Figure 3** in the main report provides a sketch of the proposed modifications. This work could be done in conjunction with the implementation of the recommendations of the Village Study, with the slight modification of the crosswalk on East River Road further north to be more in line with the sidewalk on the Gove Hill Bridge and the proposed sidewalk on Quaker Road.

ALTERNATIVE C1 – CULVERT REPLACEMENT

This alternative includes the complete replacement of the existing box culvert approximately 750 feet northwest of the Truchon Bridge with a wider one that would accommodate wider travel lanes and paved shoulders for bicycle and pedestrian movement.

ALTERNATIVE C2 – CULVERT UPGRADE

This alternative includes the reconstruction of the existing wing walls of the box culvert and the expansion of the pavement by up to four feet on either side to match the widening proposed for the rest of the roadway surface. The road would be striped to maintain the striping on the roadway on either side of the culvert.

ALTERNATIVE C3 – CULVERT RESTRIPING

This alternative consists of adding road striping to the edges of the existing pavement creating two nine-foot wide travel lanes with a one-foot shoulder on either side. “Narrow Bridge” and “Watch for Pedestrians and Bicyclists” signs would be placed along the roadway at appropriate distances from the culvert to warn approaching vehicles of the narrower pavement.

ALTERNATIVE T1 – TRAIL SEGMENT 1

Trail Segment 1 would create a trail from the south end of Clark Road, following an existing old forest road, to a point on or close to the location where it crosses from the Bernstein property to the Truchon Property.

ALTERNATIVE T3 – TRAIL SEGMENT 3

Trail segment 3 branches off of Trail Segment 1 at the point where Segment 1 meets the Bernstein/Truchon property line. It would continue east along the property line between the Truchon and Miller properties. It would move down the hillside adjacent to East River Road via several switchbacks. A cross walk at the east end of Segment 3 would bring pedestrians heading north on the east side of East River Road across the road to the trail.

ALTERNATIVE T4 – TRAIL SEGMENT 4

Trail Segment 4 would create a trail from the southern end of Trail Segment 1 that heads southeast through the forest along the western edge of the large meadow. At the corners of the Westbrook and Gemignani properties, the trail would turn to the east and follows the northern edge of the Gemignani property. The trail would include several small switchbacks as needed to help reduce the grade of the trail and to eliminate the potential for erosion on the trail. It would circle around the residents close to the road to the east of the Gemignani property and join the driveway which would take the trail down to East River road. A pedestrian zone would be established in front of the school to alert motorists to the presence of children crossing the road.

ALTERNATIVE T7 – TRAIL SEGMENT 7

Trail Segment 7 would be an extension of the existing trail on the southern end of the school property. It would continue to head south towards the steep access road that provides access between this low field and East River Road. Segment 7 would continue eastward on the north side of the guardrail along East River Road. At the Garland Bridge close to South Lincoln Road, the trail would cross the river via a new cantilevered pedestrian walkway. The trail would cross East River Road, South Lincoln Road or Lincoln Gap Road as appropriate, depending on which side of the Garland Bridge the new walkway would be added. The radius between Lincoln Gap Road and South Lincoln Road would be reduced, as possible to reduce the crossing distance for pedestrians.

The trail would enter the Thompson property on the east side of South Lincoln Road at the intersection of South Lincoln and East River Roads. It would head southeast for a short distance and then cross, via a small footbridge, an intermittent stream that drains the meadow to the east. The trail would continue along the route of an existing foot path through the small forest along the east side of South Lincoln Road. Alternatively, the trail could hug the western edge of the meadow. At the field access drive from South Lincoln Road, the path shifts to the western edge of the field, if in the forest, or just continues wrapping around the west side and then the south side of the meadow to enter the Town Forest property to the east of the Town garage.

ALTERNATIVE T11 – TRAIL SEGMENT 11

Alternative Trail Segment T11 would create a defined trail or small shared use path from the south end of the Gove Hill Bridge to the Little League Field. It would cross the Fire Department property (listed as Town Property) on the northern edge of the parking area. The implementation of the trail could also include the relocation of the existing barbecue area further from the river, to allow the trail to go between the two. This alternative would also include the installation of at least one bicycle rack near the Little League Field.

ALTERNATIVE T12 – TRAIL SEGMENT 12

Alternative Trail Segment T12 would create a short trail that links South Lincoln Road with the area on the Town Forest property planned for a future parking area and from which trails into the property would originate. The northern end of the parking lot would be located as far to the north of the curve in South Lincoln Road as possible to maximize the sight distances for a pedestrian crossing. The trail would stay relatively close to the road due to the wetland east of the road. It would gradually climb the bank up to the level area where the future parking area is located, avoiding the Town Garage Storage Area. Shrubs may be planted along the western edge of this storage area to help separate it from the path.

ALTERNATIVE W1a - ROAD WIDENING ONE FOOT

Alternative W1a includes widening East River Road by one foot on either side between the southern end of the existing sidewalk and Community School. The road would be striped to create two nine-foot wide travel lanes, each with two-foot wide shoulders. The narrower travel lanes would help to induce slower vehicular traffic speeds and the shoulders would provide minimal space for pedestrians.

ALTERNATIVE W2a - ROAD WIDENING TWO FEET

This alternative would widen East River Road by two feet on either side of the existing pavement or up to four feet on one side of the pavement to avoid impacting trees or other obstacles between the southern end of the existing sidewalk and Community School. The road would be striped to create either two ten-foot wide travel lanes with three-foot wide shoulders on each side or two nine-foot wide travel lanes with four-foot wide shoulders on each side. **Figure E-2** highlights the locations where the widening would be asymmetrical.

The shifting of the center line from the center of the existing road would need to be documented to keep the current center line accurate for future right-of-way issues. (See **Section D** for additional information on the current right-of-way.) The shift would also introduce small curves into the roadway that could help to reduce the overall travel speed of motor vehicles.

ALTERNATIVE W1b - ROAD WIDENING ONE FOOT

Alternative W1b includes widening East River Road by one foot on either side between the Community School and the Garland Bridge. The road would be striped to create two nine-foot wide travel lanes, each with two-foot wide shoulders. The narrower travel lanes would help to induce slower vehicular traffic speeds and the shoulders would provide minimal space for pedestrians.

ALTERNATIVE W2b - ROAD WIDENING TWO FEET

This alternative would widen East River Road by two feet on either side of the existing pavement or up to four feet on one side of the pavement to avoid impacting trees or other obstacles between the Community School and the Garland Bridge. The road would be striped to create either two ten-foot wide travel lanes with three-foot wide shoulders on each side or two nine-foot wide travel lanes with four-foot wide shoulders on each side. **Figure E-2** highlights the locations where the widening would be asymmetrical.

The shifting of the center line from the center of the existing road would need to be documented to keep the current center line accurate for future right-of-way issues. (See **Section D** for additional information on the current right-of-way.) The shift would also introduce small curves into the roadway that could help to reduce the overall travel speed of motor vehicles.

ALTERNATIVE WS - ONE SIDED WIDENING

Alternative WS would widen just one side of the roadway by either one or two feet. This option could occur on East River Road from the end of the Burnham Hall on street parking to opposite the southern end of the existing sidewalk. The road would not be widened on the east side where the existing curb and sidewalk define the edge of the road.

One sided widening of two feet could also be appropriate on South Lincoln Road where it is not possible to widen the road by more than one foot due to the conditions on the conserved land between the existing guard rail and the river.

D. DISCUSSION

BRIDGE WIDENING

It is assumed that no matter what alternatives are supported by the community, the upgrade of the Truchon Bridge would include at least four foot paved shoulders on both sides of the travel way.

LEVEL OF CHANGE

Several of the proposed alternatives would not significantly change the physical bicycling or walking conditions along the road but could heighten the awareness of their presence by

motorists which could create a more accommodating condition for non-motorized travel along the roadway. Other measures are meant to change the surroundings of the roadway to eventually induce slower travel by motorists.

Some of the changes provide only modest improvements, but even these could make it easier for bicyclists and pedestrians to use East River Road.

ADA

The improvements proposed along the roadway need to fully comply with the requirements of the Americans with Disabilities Act (ADA). Since the improvements along the roadway are going to, in almost all cases, be actual expansions of the roadway itself, ADA allows the improvements to be at the same grade as the roadway. The widths are not directly regulated since they are facilities that are shared with the motorists. The *Vermont Pedestrian and Bicycle Facility Planning and Design Manual* recommends that shoulder widths should follow the recommendations of the *Vermont State Standards*. The *Vermont State Standards* recommend that on local roads with speed limits of 30 mph and Average Daily Traffic levels of between 400 and 1,500 vehicles should be a minimum of two feet with nine-foot travel lanes. East River Road fits these conditions. Due to the comments from the Town, there are only a few alternatives that include nine-foot travel lanes.

The narrower trails can be constructed without meeting the width and slope requirements of wider paved non-motorized facilities. This could be changing the next few months as the Federal government is finalizing regulations for off road facilities. Consequently, these trails can have steep sections and be relatively narrow but they would not meet the goal of providing accessible mobility to all pedestrians and bicyclists in and through the Study Area.

RIGHT-OF-WAY

The current information that our team has obtained about rights-of-way is that when a right-of-way has not been clearly established in the land records, it is assumed to be three rods wide (approximately 49 feet), centered on the existing roadway. Our understanding is that this is the case regardless of what adjoining property deeds state.

Attachment 1

Additional Alternatives

ADDITIONAL ALTERNATIVES NOT INCLUDED FOR FURTHER DISCUSSION

The following Alternatives were included in the original list but were eliminated for the reasons stated at the end of each description.

ALTERNATIVE P1 – BIKE PATH 1

This Alternative would create a shared use path from the southern end of Clark Road to East River Road just south of the Truchon Bridge. The Path would leave the end of the road and pass between a small shed and the New Haven River, before heading south along the alignment of an existing farm road. The path would follow the western, higher branch of the road as it splits approximately 575 feet south of the end of Clark Road. The path would continue to follow the forest road south, crossing a small intermittent stream via a prefabricated bridge. As the path enters the Truchon property, it would turn to the east and north east to cross the lawn just to the west of the existing barn. From here, the path would merge with the existing driveway and head east towards East River Road, where the path would end. A crosswalk would bring pedestrians heading south to the east side of the roadway.

This alternative was considered to not be feasible because of the limited space for locating a shared use path between the Truchon house and the New Haven River that would not significantly impact the residents of the house, as well as the need to come relatively close to the house on the Bernstein property at the southern end of Clark Road. Outside of the proximity to the Bernstein property house, the northern portions of the path could be easily constructed with minimal impacts to the adjacent forest because it would follow the alignment of the existing forest road.

ALTERNATIVE P2 – BIKE PATH 2

Alternative P2 includes the construction of a shared use path between the Community School and the Town Forest. The path would start at the eastern end of the parking lot next to the school and go through the woods south of the field, roughly using the alignment of the existing nature trail. The path would continue south on the adjacent property and cut upward across the slope along the east side of East River Road, meeting the grade of the road close to the western end of the Garland Bridge. The path would cross the New Haven River via a new cantilevered structure on one side of the existing bridge. On the eastern side of the bridge, the path would continue across the appropriate roadways. (The specific alignment depends on which side of the Garland Bridge the cantilevered structure could be located.) The path would enter the property east of South Lincoln Road on the southeast corner of the intersection. It would hug the western and southern end of the field until it crosses into the Town Forest parcel east of the Town Garage.

This alternative was not considered further because of the need to greatly disturb the existing nature trail on the School property in order to build the trail. Construction would also need to cut across the slope on the east side of East River Road which would require a

significant amount of grading to create a level area for the path. The routing of the path across the Thompson property would also most likely severely limit or eliminate the current low level agricultural use of the property.

Alternative S – Sidewalk Extension – This alternative consists of extending the existing sidewalk on the east side of East River Road south to the Community School with no other widening of the roadway.

This alternative was not considered further because of the increased on-going maintenance cost to the Town and the impact on the rural character of the roadway.

ALTERNATIVE T2 – TRAIL SEGMENT 2

Trail Segment 2 would create a trail from the southern end of Trail Segment 1 across the Truchon property to East River Road, using the Truchon driveway for much of the alignment.

The need to bring the trail extremely close the existing house on the Truchon property made this trail segment unacceptable.

ALTERNATIVE T5 – TRAIL SEGMENT 5

Trail Segment 5 would break from Trail Segment 4 at Cold Spring Road and would follow the road north to East River Road. A cross walk at the intersection of Cold Spring and East River Roads would bring pedestrians heading north on the east side of East River Road across the road to the trail.

This segment was not pursued because it would take users away from the destination relatively close to the end point. It would still be possible for those that wanted to travel north to use the Cold Spring Road to reach East River Road.

ALTERNATIVE T6 – TRAIL SEGMENT 6

Trail Segment 6 would break from Trail Segment 4 at the point approximately 250 feet east of Cold Spring Road where the trail turns to head south. Segment 6 would head north and use the existing driveway to reach East River Road. A cross walk at the north end of Segment 6 would bring pedestrians heading north on the east side of East River Road across the road to the trail.

ALTERNATIVE T8 – TRAIL SEGMENT 8

This trail segment was joined with Trail Segment 7.

ALTERNATIVE T9 – TRAIL SEGMENT 9

Trail Segment 9 would begin at the small parking area adjacent to the tennis courts on the *Lincoln Sports* property. The trail heads northwest and north towards the Little League field on the same property, crossing the drainage ditch via a small pedestrian bridge and the wet meadow via a boardwalk. This trail was not considered further because it was not considered to be needed at this point in time, but it could still be a valuable trail to add to the Sports property in the future.

ALTERNATIVE T10 – TRAIL SEGMENT 10

Trail Segment 10 would begin at the small parking area adjacent to the tennis courts on the *Lincoln Sports* property. The trail heads northwest and north towards the Little League field on the same property. It wraps around to the west of the wet meadow, crossing the intermittent stream via a small footbridge. This trail was not considered further because it was not considered to be needed at this point in time, but it could still be a valuable trail to add to the Sports property in the future.

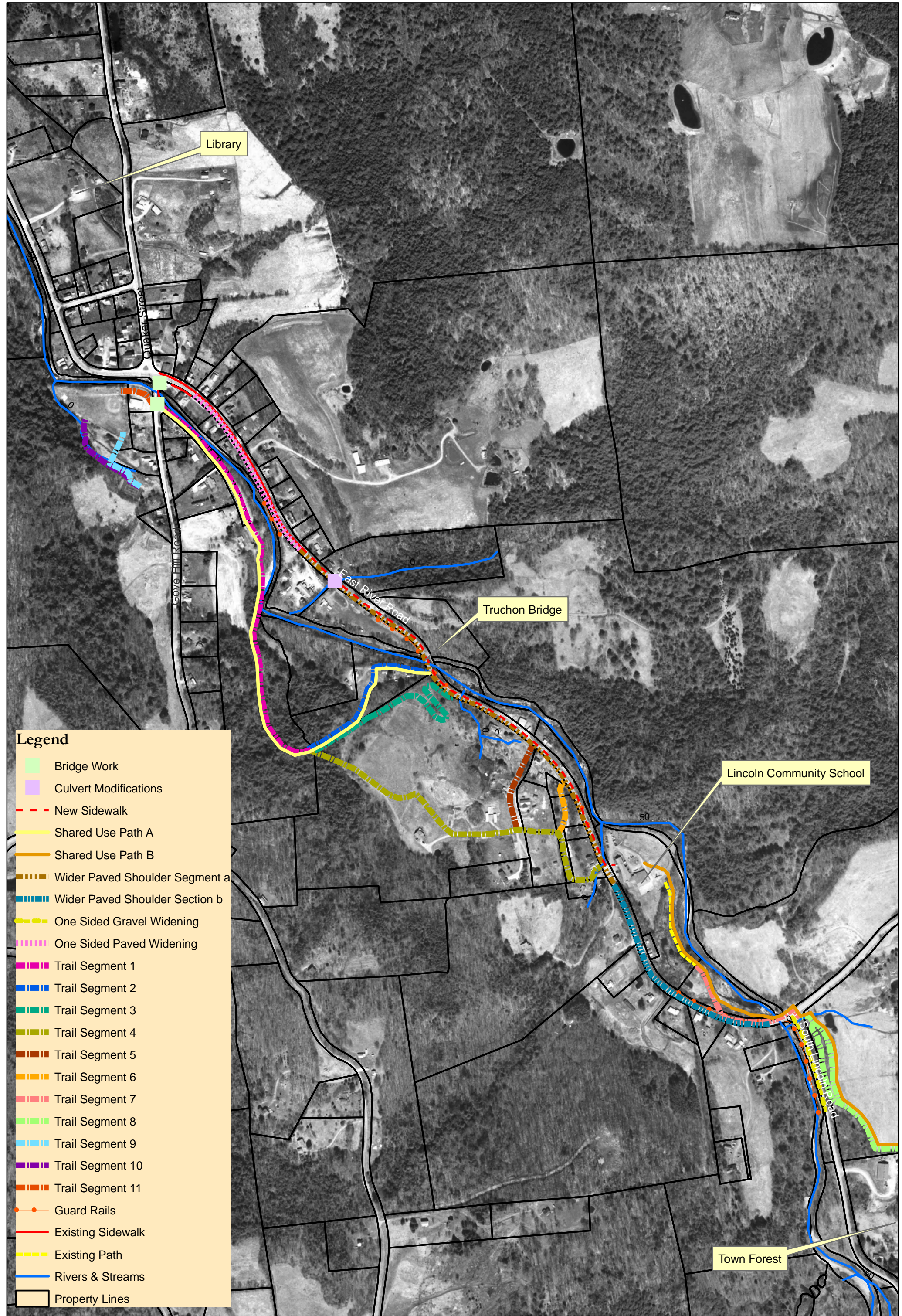
ALTERNATIVE Wb - ROAD WIDENING (SOUTH OF THE COMMUNITY SCHOOL)

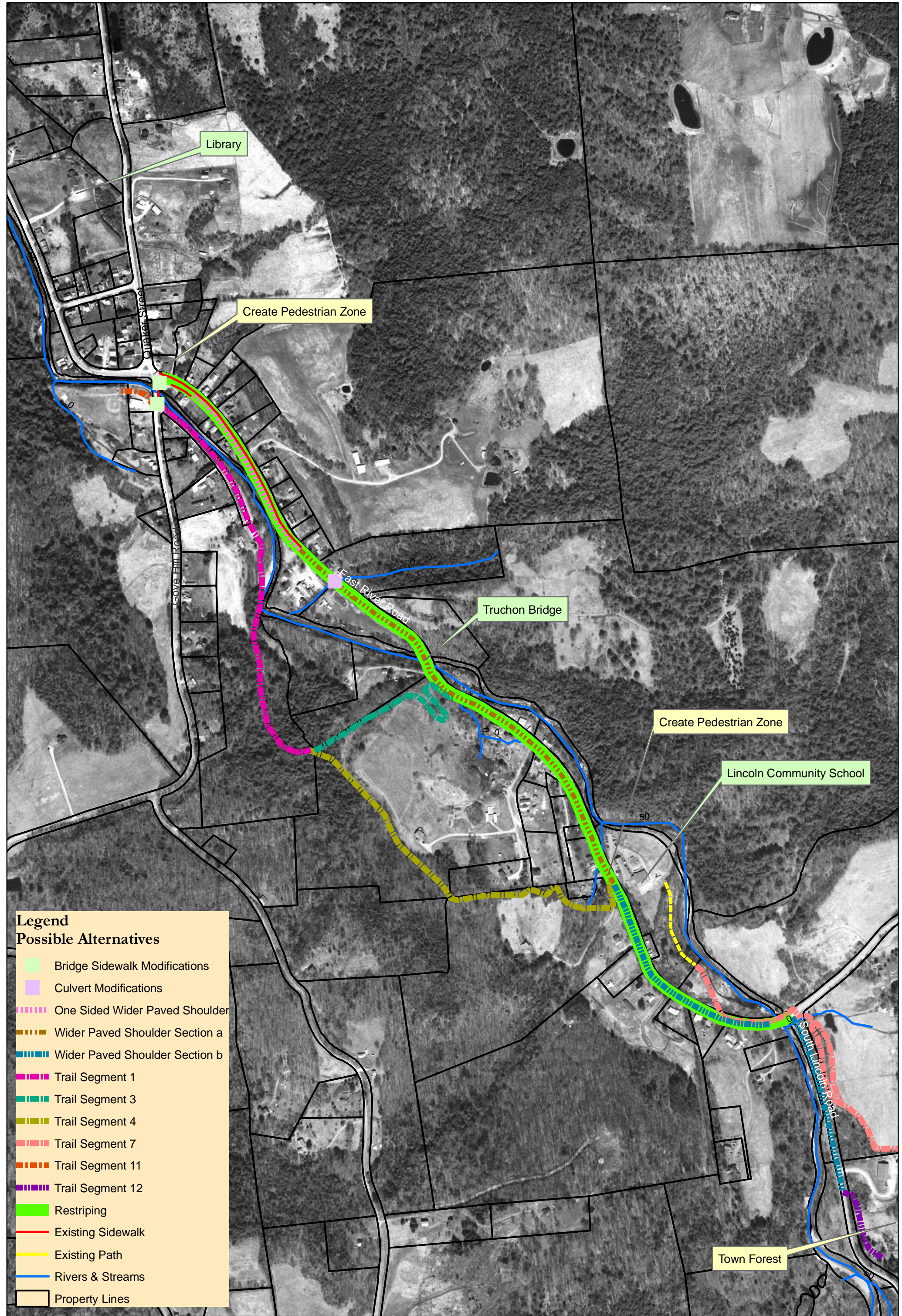
The road widening south of the school would involve too many impacts to adjacent properties and/or trees to be considered desirable.

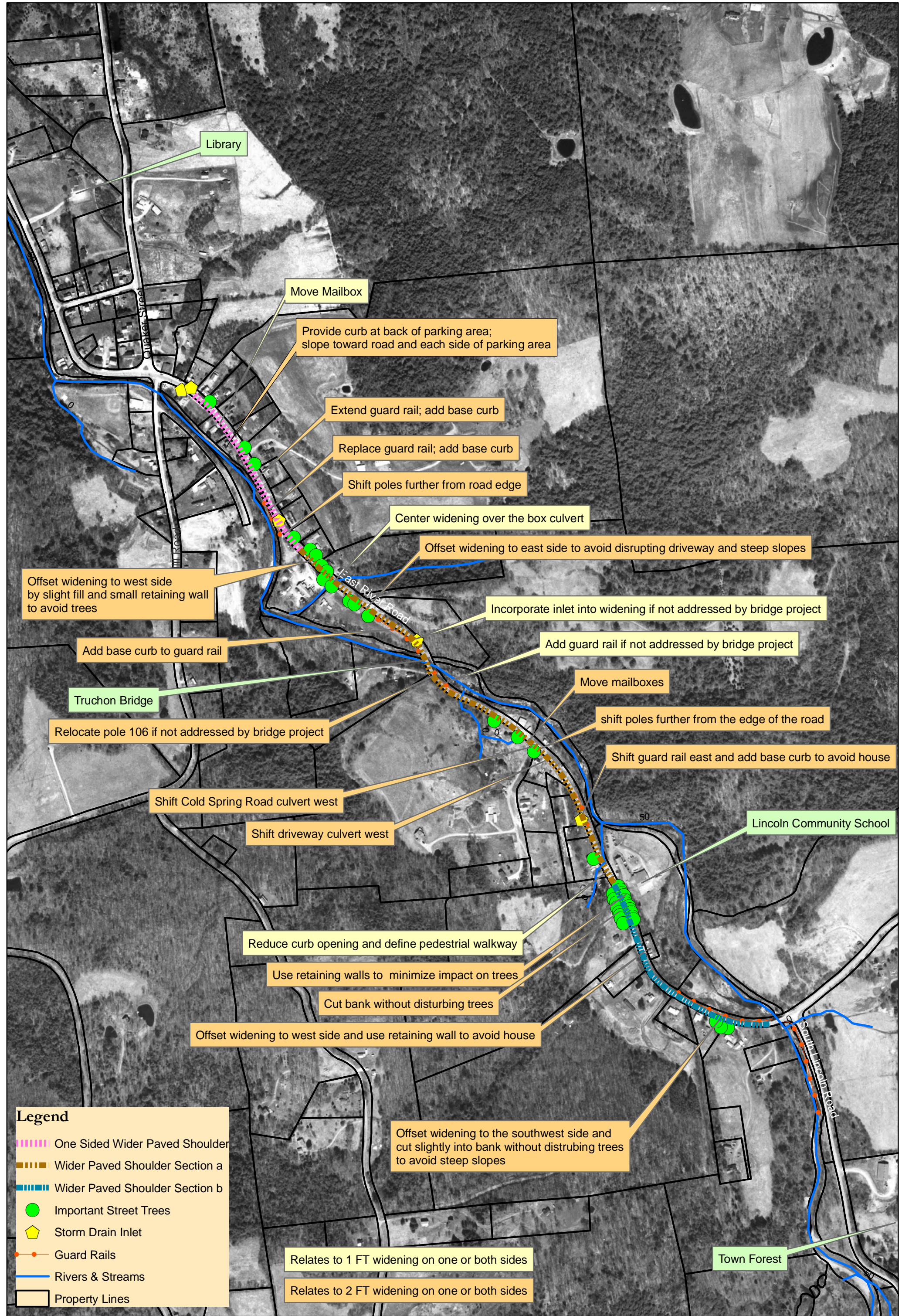
ALTERNATIVE W5 – ONE SIDED GRAVEL WIDENING

This alternative would widen South Lincoln Road on the east side, away from the preserved land on the west side.

It was not developed further because there is limited room for widening on the east side without pushing back the slope and shifting the ditch further east, which would make this option very costly with minimal increases in mobility for pedestrians or bicyclists. The road, if used, could be used as is.







Appendix C

Trail Construction



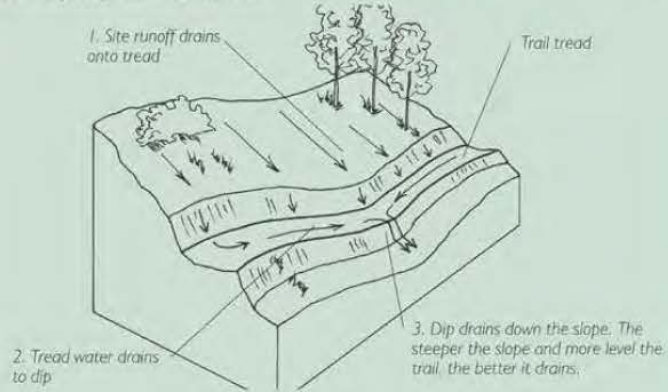
This OHM trail is at least 25 years old and has had virtually no maintenance. Rolling grade, coupled with gentle grades and the tree canopy, prevent erosion. The sandy loam tread absorbs much of the runoff, along with well-placed tread dips draining the rest.



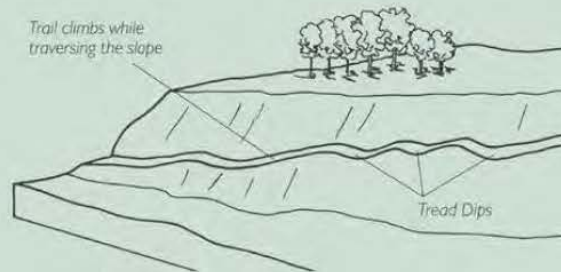
Gentle slopes require careful attention to draining tread dips. Without a steeper slope to quickly drain the dips, puddles and mudpits can quickly form.

TRAVERSING A SLOPE TO PREVENT EROSION

Every dip must drain to somewhere lower than itself. The most sustainable way to achieve this is by traversing a slope, as illustrated below.



A trail using rolling grade can still climb a hill as long as the climb is not continuous, as illustrated below.



The "easiest" route is not necessarily sustainable. The "easiest" way to climb the ridge from left to right is along the ridgeline (the horizon). However, if that were the case, the trail would not be able to drain water to the side because the "local" downhill at any point on the trail would be down the ridgeline (and trail), not to the side. By using rolling grade adjacent to the ridgeline, side drainage is created, forcing water to flow off the side of the tread at predictable intervals defined by low points. To work, all tread dips (yellow arrows) must drain to somewhere lower than the tread. As the photo illustrates, it is still possible to climb the hill when using a rolling grade approach with crests and dips in the trail.



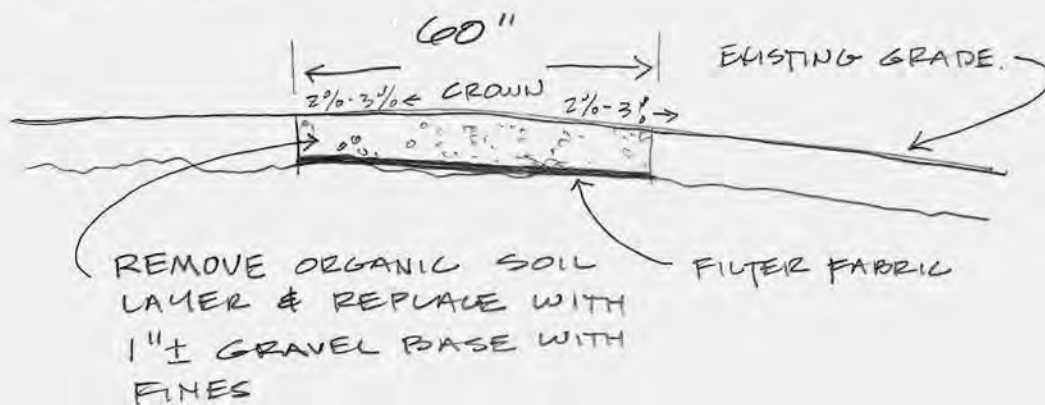
(Left) This trail climbs faster than it might appear. Rolling grade is used to limit tread watersheds on this erosive soil. With tree anchors, it is also used to make the trail more interesting to visitors.



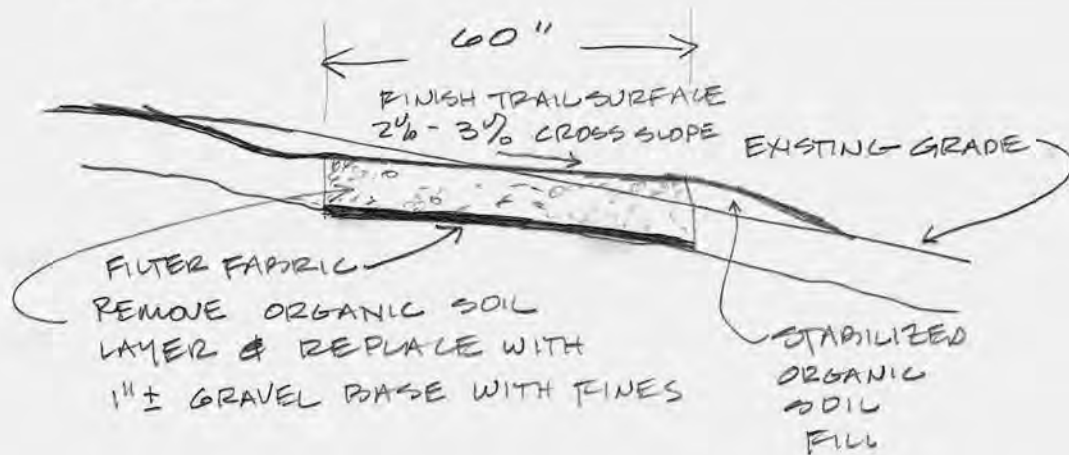
(Right) Rolling grade is used on this OHV trail to drain the tread, control erosion, and create challenges for ORV drivers. The tread is intentionally rough and extreme – yet erosion is limited by very short tread watersheds.

TYPICAL CROSS SECTIONS NOT TO SCALE

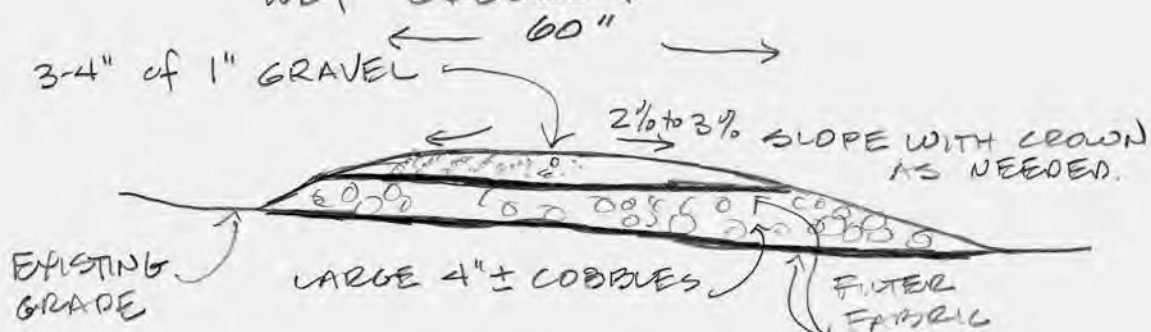
LEVEL GROUND



SLOPING GROUND



WET GROUND



Appendix D

Preliminary

Historic Aboveground Resources Assessment



**Preliminary Historic Aboveground Resources Assessment
Bicycle and Pedestrian Planning & Feasibility Study
Lincoln, VT
6 June 2011**

Submitted to:

Jim Donovan
Broadreach Planning & Design
Charlotte, VT 05445

Prepared by:

Sarah LeVaun Gaulty, MSHP
Patricia M. O'Donnell, FASLA, AICP
Heritage Landscapes, LLC

INTRODUCTION

The goal of this review is to identify existing historic resources in the project area that are listed or eligible for listing on the National Register of Historic Places and could potentially be affected by bicycle and pedestrian circulation improvements. This effort assists with compliance under Section 106 of the National Historic Preservation Act and Section 4(f) of the U. S. Department of Transportation. This investigation is a reconnaissance-level survey of historic aboveground resources, not a detailed inventory of National Register eligible properties. Further research will be necessary to determine National Register eligibility for these resources.

Heritage Landscapes conducted a field inspection of the project area on April 6, 2011 to assess potential historic resources in the project area. The focus of this field review was the area extending approximately 500 feet either side of East River Road between the Lincoln village center and the intersection with South Lincoln Road, and extending south along South Lincoln Road to the Town Forest. This includes features in the right-of-way and the adjacent portions of abutting properties. Should the breadth of proposed improvements be broader than assumed for this review, the impacts to adjacent structures and other elements should be re-reviewed. Off-path/road areas of dense vegetation with limited access were not surveyed.

In addition to field inspection, baseline research revealed some information about historic resources within the project area. At this time, none of the historic resources along the defined route are listed on the National Register of Historic Places. Heritage Landscapes also reviewed historic maps, including the *Map of Addison County, Vermont, From Actual Surveys* (H. F. Walling, 1857) and the *Atlas of Addison County* (F. W. Beers, 1871, Republished 1969). These documentary resources provide a

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degree of background and context to inform this reconnaissance-level historic review (see Figures 1 and 2).

SUMMARY OF RESULTS

A number of potentially-historic resources have been identified within the study area. Specific historic resources identified during field review are addressed in the following paragraphs, organized by location. Potential conflicts with historic resources are outlined. Typically, these conflicts stem from the proximity of National Register-eligible resources to the adjacent roadway. Field review took place prior to the development of recommendations, so the area of potential effect is broader than the area that would be affected by the proposed widening of the roadway as developed. The proposed widening would have a minimal impact on existing historic aboveground resources. Nevertheless, it is important to identify all the historic aboveground resources in the study area.

Village Core

The historic village core includes a collection of structures, many of which are historic, clustered along East River Road. A number of these potentially-eligible resources are positioned close to the right-of-way, and could be affected by changes to the existing roadway. Existing asphalt and gravel sidewalks extend on the west side of the street from the village south to the Old Hotel drive, but do not appear to include historic curbs or other historic features. The sidewalks and topography at the Burnham Library appear to have been recently improved, with recent grading and improvements to walks and paths.

Several village core buildings appear potentially eligible for the National Register. Additionally, the cohesive character and historic integrity of the core area suggests that the village may be eligible for the National Register as a Lincoln Village Historic District. Contributing historic resources in the center of the village within the project areas may include:

- The **Lincoln General Store**, located at 17 East River Road: Resource has been considerably altered since its construction. A store appears at this location on the 1857 H. F. Walling map and 1871 Beers atlas (see Figures 1 and 2), and the building's Greek Revival details suggest that it dates to the mid-1850s. A utilitarian red frame structure at the rear of the General Store also appears to be a historic resource.
- **33 East River Road:** Historic building with Gothic Cottage details appears to have high integrity (see Figure 3).
- **47 East River Road:** Principal building appears to have high integrity, and includes a historic carriage barn that would likely be a contributing resource.
- **Burnham Hall**, located at 52 East River Road: Built ca. 1925, appears to retain a high degree of integrity (see Figure 4). This brick building is a center of community activity; it served for decades as the town library and continues to accommodate meetings and other community needs.

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- **59 East River Road:** Gothic-style building appears to be a historic resource. This property includes an intact carriage barn that would likely be a contributing historic resource.
- The integrity of the residence south of 59 East River Road is diminished due to window alterations, including the addition of a bay window, and further investigation is necessary to determine its potential eligibility.

East River Road between Village Core and the Truchon Bridge

The concentration of buildings is less dense south of the village core on East River Road. Several historic resources are positioned close to the existing roadway, and should be considered in project planning. Historic resources with ample setback from the existing roadway are not considered in this assessment. The potential historic resources that could be affected by improvements to bicycle and pedestrian facilities are:

- **95 East River Road:** Gothic residence may be eligible, but is on a rise set back from the road, so would not likely be affected by bicycle-pedestrian improvements. However, the property includes a retaining wall close to the right-of-way that may be historic.
- **Residences on West Side of East River Road:** Three structures positioned between the roadway and the river with limited setback. The central of the three, #126, may not be a historic resource due to extensive alteration, but the residence to the north and the vernacular Italianate structure to the south (see Figure 5) are potentially historic resources.
- **Stone Remnants:** Extant stone retaining wall and remnants that appear to be a foundation are positioned on the steep slope east of East River Road, north of the Truchon Bridge (see Figures 6 and 7). These stone features are related to past land use, and could be important historic remnants. Widening of the existing roadway will approach these potentially significant historic resources, particularly the lower remnant. Adverse effects should be avoided if possible.

South of the Truchon Bridge

The concentration of historic structures is also less dense south of the Truchon Bridge along East River Road. As above, historic resources with ample setback from the existing roadway are not considered in this assessment. The potential historic resources that could be affected by improvements to bicycle and pedestrian facilities are noted as:

- **Red Barn:** Structure in poor condition south of 639 East River Road positioned close to the roadway (see Figure 8). This barn has the potential to be an eligible historic resource.
- **Schoolhouse,** 876 East River Road: Building that now houses the Lincoln Co-Op Preschool. Both the 1857 Walling map and 1871 Beers atlas show a schoolhouse in this location, suggesting that this is an eligible historic resource (see Figures 1 and 2). Though this building is set back from the roadway, its history and importance in the community as a civic space merits mention in this historic overview.

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Bridges

Three bridges are positioned within or near the study area: in the village at the intersection of East River Road and Gove Hill Road, the Truchon Bridge on East River Road at the center of the study area, and on East River Road near the intersection with South Lincoln Road. Two of these bridges are recently constructed, and none appear to be an eligible historic structure.

Town Forest

The Town is proposing future access to the Town Forest along the existing driveway to the life estate house after ownership reverts to the Town. The Town intends to remove the existing house and create a small parking area on the site. Prior to the removal of the house, the Town will need to carry out a more extensive assessment of National Register eligibility for this structure.

Historic Resources in Possible Alternative Alignment

Proposed plans include the possibility of an off-road alignment that crosses the Gove Hill Bridge, follows Clark Road, and cuts cross-country to East River Road south of the Truchon Bridge. Affected woodland and other areas not easily accessible from public roads were not surveyed for this assessment, but properties on public roads were noted for potential eligibility. Structures lining the Clark Road corridor are a mix of potentially-eligible and ineligible resources. Potentially-eligible resources include:

- **Cape-style residence** at the end of the road and associated outbuildings. This structure appears to be noted on the 1871 Beers Atlas as the home of W. W. Pope at the end of an informal roadway (see Figure 9). Alignment of a cross-country trail should avoid impacts to this property to the extent possible.
- **Residence at the corner of Clark Road and Gove Hill Road** may also be eligible, though the building's setback is considerable and improvements to the road for this project would not likely result in an effect.
- The alignment of the possible cross-country path could pass through the Cold Spring Road hillside. Though the residences in this development are recent and not historic, this open landscape may be a characteristic feature and may include individual historic features such as stone walls, fences, agricultural or other features (see Figure 10).

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Preservation Landscape Architects & Planners
Charlotte, Vermont 802.425.4330 Norwalk, Connecticut 203.852.9966 Asheville, North Carolina 828.989.8616

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Figure 1. *Map of Addison County, Vermont, From Actual Surveys*, H. F. Walling, 1857. Area within yellow box presented in detail on following page. Courtesy Robert Raymond, rootsweb.ancestry.com. (R-Lincoln1857M-HFWalling.jpg)



Figure 1a. Detail, *Map of Addison County, Vermont, From Actual Surveys*, H. F. Walling, 1857. Courtesy Robert Raymond, rootsweb.ancestry.com. (R-Lincoln1857M-HFWalling-detail.jpg)

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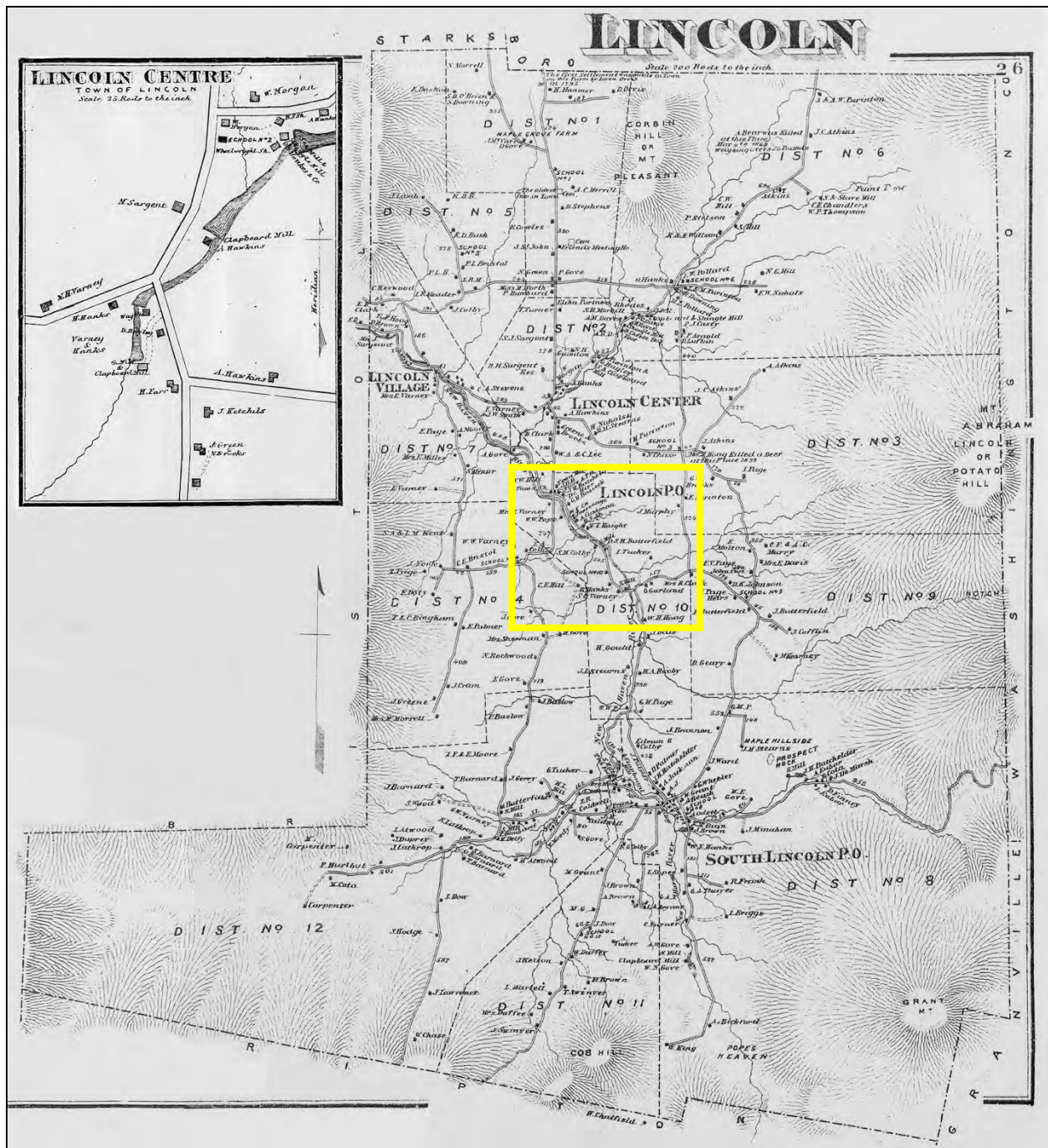


Figure 2. *Atlas of Addison County*, F. W. Beers, 1871, Republished 1969. Area within yellow box presented in detail on following page. Courtesy Robert Raymond, rootsweb.ancestry.com. (R-Lincoln1871.jpg)



Figure 2a. Detail, *Atlas of Addison County*, F. W. Beers, 1871, Republished 1969. Area within yellow box presented in detail on following page. Courtesy Robert Raymond, rootsweb.ancestry.com. (R-Lincoln1871-detail.jpg)

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Figure 3. 33 East River Road. Courtesy Heritage Landscapes. (R-Lincoln 2011-04-06 010.jpg)



Figure 4. Burnham Hall, 52 East River Road. Courtesy Heritage Landscapes. (R-Lincoln 2011-04-06 012.jpg.)

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Figure 5. Vernacular Italianate structure. Courtesy Heritage Landscapes. (R-Lincoln 2011-04-06 029.jpg)

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Figure 6. Stone retaining wall. Courtesy Heritage Landscapes. (R-Lincoln 2011-04-06 047.jpg)



Figure 7. Remnant stone feature. Courtesy Heritage Landscapes. (R-Lincoln 2011-04-06 049.jpg)

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Figure 8. Red barn. Courtesy Heritage Landscapes. (R-Lincoln 2011-04-06 080.jpg)



Figure 9. Clark Road Cape. Courtesy Heritage Landscapes. (R-Lincoln 2011-04-06 001.jpg)

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Figure 10. Open hillside at Cold Spring Road. Courtesy Heritage Landscapes. (R-Lincoln 2011-04-06 089.jpg)

Appendix E Town Plan Excerpts

The following text sections were extracted from of the Lincoln Town Plan. They are relevant to the goals and objectives of this study.

Limit development within the river corridor to promote the public health, safety and general welfare, prevent increases in flooding caused by the uncontrolled development of lands in areas of special flood hazard, and to minimize losses due to floods.

Allow the river to move within its corridor, mitigate increases in downstream river erosion resulting from development, minimize property loss and damage due to river erosion, and limit land uses and development that may pose a danger to health and safety.

Encourage all development to use the natural attributes of the land and to blend into the landscape as best as possible.

Protect historic Lincoln structures. There are 62 buildings listed in the Vermont Historic Register.

Maintain and create public facilities and spaces that encourage social interaction among all Lincoln residents.

residents rely primarily on private means of transportation. However, pedestrian and bicycle traffic is frequent within the village district. There are narrow sidewalks in the Village Center and West Lincoln. Increase pedestrian and bicycle safety.

Expand village sidewalks/bike paths to connect the library, ball fields, school, and other population centers.

Incorporate sidewalks and/or bikeways into road and right of way improvements.

Appendix F

Village Center Study

Scoping Report
for a
Village Center Study
in the
Town of Lincoln, Vermont



prepared for the

Addison County Regional Planning Commission
and the
Town of Lincoln, Vermont

Prepared by:



SUMMIT ENGINEERING, INC
Engineers + Surveyors + Planners + Landscape Architects

50 Joy Drive P.O. Box 2225
South Burlington, VT 05407-2225

October 25, 2006

Summit Engineering, Inc.

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I. PROJECT PURPOSE AND NEED

The purpose of this project is to increase mobility and improve safety for pedestrians and motor vehicles in the village area of Lincoln. The specific purpose of the project is to enhance safe pedestrian access through the village area and to improve the Quaker Street/Main Street intersection. This project will improve the safety and mobility of pedestrians, including school children, relieve automobile and pedestrian conflicts and provide for alternative transportation between existing, residential, and municipal centers.

This project is needed to allow safe pedestrian access to the commercial establishments along Main Street including Burnham Hall (municipal center) and the Lincoln United Church on Quaker Street for residents in Lincoln. It should be noted that an existing sidewalk on the north side of Main Street exists and the intent of this project is to promote safe pedestrian connections throughout the village. The project conceptual design conforms to ADA requirements, AASHTO and VTrans guidelines and performs the following functions:

1. An improved route for pedestrians to travel along Main Street to Burnham Hall, the Lincoln Village Store, recreation fields, and the Lincoln United Church.
2. Provides a traffic calming effect on vehicular through traffic along Main Street by narrowing the appearance of the roadway and improving pedestrian access.
3. Reinforces and extends the village character to incorporate the Quaker Street intersection and the church as part of the village.



Quaker Street/Main Street intersection

II. INTRODUCTION

The Lincoln Selectboard has asked the Addison County Regional Planning Commission (ACRPC) for professional assistance in investigating and recommending safe pedestrian access along Main Street. As the first step in this process ACRPC secured a grant from the Vermont Agency of Transportation, Enhancement Program to conduct an inventory of pedestrian needs and a feasibility study for improved pedestrian access. As a result, the Town and ACRPC selected

Summit Engineering, Inc. to conduct an inventory of pedestrian needs and a feasibility study for improving pedestrian circulation in the village area.

III. PROJECT DESCRIPTION

The overall concept behind this project is to complete a planning study for increased pedestrian circulation including crosswalks, curb extensions and better defined on street parking that safely connects the businesses and municipal centers with residences and along Main Street. The intent of this study is to document the current conditions and to solicit local input for pedestrian needs and any areas of concern. In addition, the study investigated the opportunities and constraints to development, such as natural and cultural resources, developed specific projects and estimated preliminary project costs. The product for this study is a planning document that will enable the Town to apply for either transportation enhancement funding or other sources of funding, as they become available.

IV. EXISTING CONDITIONS

The goal of this study was to evaluate pedestrian access and mobility in the village area, specifically along Main Street and to investigate potential deficiencies in the Quaker Street/ Gove Hill Road intersections with Main Street. The current alignment of these two intersections limits safe pedestrian access and the potential for vehicle/pedestrian conflicts, (refer to appendix A for a list of deficiencies). In addition, VTrans is in the final design process for replacing the Gove Hill Road bridge, (Bridge No.48) over the New Haven River and any proposed intersection or pedestrian improvements will need to be coordinated with the new bridge alignment

River Road (Main Street) is an east-west town road (T.H. 1) that passes through the center of Lincoln. Westerly, it connects Lincoln with the Route 116 corridor, Bristol and the Champlain Valley. Seasonally, it connects Easterly to Warren and the Mad River Valley and the associated ski areas in the valley. The existing right-of-way width for this roadway is an assumed 49.5 feet or 3 rods wide. The existing posted speed limit is 35 m.p.h. in the village and 50 m.p.h. outside of the village area.



Currently, there is only one dedicated pedestrian facility along north side of Main Street in the village area. There are limited and inconsistent paved shoulders along both sides of Main Street ranging from zero to two feet wide. There is no accident data from the Vermont State Police for Town Highway #1 (River Road) in the Town of Lincoln.

One of the key components to providing a safe pedestrian connections is to change the drivers expectations, slow the vehicle speeds, increase reaction times for motorists and pedestrians and safely balance the needs of all the users of the roadway including pedestrians. The proposed project design separates both pedestrians and motor vehicles and will help to change drivers expectations and increase safe pedestrian mobility through the village area.

V. ORIGINS AND DESTINATIONS

Safe pedestrian access along Main Street is the main focus of this investigation. Key destinations for residents in the village are Burnham Hall, Lincoln Store, Lincoln United Church and the Lincoln Municipal Offices.

VI. LOCALLY IDENTIFIED PROBLEMS

Several issues were identified in the Local Concerns Meeting on July 19, 2006, the Steering Committee Meetings on May 24, June 29, August 24, and October 4, 2006 and the Alternatives Public Meeting on September 14, 2006. Residents felt the speed of vehicles has increased as well as overall traffic volumes. The Quaker Street intersection and associated turning movements both from Main Street and from Quaker Street seemed to have the most concern. Safe pedestrian crossings at this intersection and in front of Burnham Hall were also discussed.

Providing a safe pedestrian facility for residents and slowing vehicle speeds clearly is a priority for the town. A new separated facility will provide many benefits for the community including a significant increase in safety for pedestrians, a traffic calming effect (overall reduction of speeds through this section of the roadway). Traffic calming is a technique that involves creating physical changes in the roadway to slow vehicles. Some techniques include sidewalks, curb extensions, lane width reductions, splitter islands, street trees, etc. The intent with this technique is to change the driver's expectations, slow the vehicle speeds, increase everyone's reaction times, and safely balance the needs of all the users of the roadway including pedestrians. The proposed vehicular and non-vehicular improvements will help to reinforce the village character by reducing vehicle travel speeds. One of the concerns that residents voiced repeatedly is the perceived excessive speed of vehicles on Main Street and the conflicting turning movements on Quaker Street. A new sidewalk and intersection re-alignment would help to change driver's expectations and increase the safety aspects for all the users of the roadway. In addition, a new sidewalk would aesthetically enhance the roadway.

VII. CONCEPTUAL ALIGNMENTS

The overall intent with these options is to safely increase pedestrian mobility along Main Street, aesthetically improve the streetscape and provide traffic calming benefits to the village. Three options were investigated based on community input. (refer to the attached plans). These options were developed using the *Vermont Pedestrian and Bicycle Facility Planning and Design Manual*, the *AASHTO Design Guide for the Development of Bicycle Facilities*, and the *AASHTO Policy on Geometric Design of Highways and Streets* as guidelines. The following narrative is intended to accompany the attached plans.

A. Option I – The Y

This option involves removing the westbound slip lane and grassed island in the center of the Quaker Street intersection and realigning the intersection to more closely align with Gove Hill Road. The intent with this option is to help reduce the turning speeds onto Quaker Street and eliminate the conflicting turning movements. No new sidewalks or crossings would be included with this option. An access management plan would need to be implemented along the easterly side of the intersection and adjacent to the gravel parking associated with the Lincoln Store. Currently, the entire gravel parking area is an unrestricted curb cut (approximately 125 feet) and the concept plans show a curbed island delineating two new curb cuts. The proposed curbed

island will help to change drivers expectations and slow vehicle speeds by giving the appearance that the roadway is narrower than existing. Additional coordination with the store is needed to make certain that the proposed improvements do not create a hardship for customers or delivery vehicles. At this point in the investigation it appears that the conceptual design can accommodate both customer and delivery vehicles. This option includes minimum 35 foot turning radii and 12- foot travel lanes with vertical granite curbing. The existing monument in the center of the island would have to be relocated and two potential areas were discussed. The first is in the lawn area next to Burnham Hall and the second area is to relocate it to the newly created lawn area in front of the church. There is no existing subsurface drainage infrastructure in the immediate area of the intersection and if this option were to be pursued additional drainage considerations will need to be included especially if new curbing were to be introduced into the roadway.

Although it was recognized that a new realigned intersection would help to eliminate the conflicting vehicle turning movements and may help pedestrian circulation, this option did not receive the highest priority compared to the other options at the September 14, 2006 Alternatives Public Meeting.

B. Option II – The T

This option involves realigning the Quaker Street intersection to be more perpendicular to Main Street. The intent with this option is to help reduce the turning speeds onto Quaker Street and eliminate the conflicting turning movements as well as improve safe pedestrian access. The difference with this option is that it incorporates new sidewalks on both sides of Quaker Street and a new, dedicated pedestrian crossing at the intersection. It will serve to tie the pedestrian needs of the church to the existing sidewalk system on Main Street. Currently there is a school bus stop in the front of the Church and this option would incorporate the bus stop into the village sidewalk system. As in Option I, an access management plan would need to be implemented along the easterly side of the intersection and adjacent to the gravel parking associated with the Lincoln Store. This option would not require any addition right of way from adjacent property owners. The proposed curbed island and sidewalk will help to change driver's expectations and slow vehicle speeds by giving the appearance that the roadway is narrower than existing. Additional coordination with the store is needed to make certain that the proposed improvements do not create a hardship for customers or delivery vehicles. At this point in the investigation it appears that the conceptual design can accommodate both customer and delivery vehicles. This option includes minimum 35 foot turning radii and 12- foot travel lanes with vertical granite curbing. As in Option 1, the existing monument in the center of the island would have to be relocated. There is no existing subsurface drainage infrastructure in the immediate area of the intersection and if this option were to be pursued additional drainage considerations will need to be included especially if new curbing were to be introduced into the roadway.

Although it was recognized that a new realigned intersection would help to eliminate the conflicting vehicle turning movements and will help pedestrian circulation, this option tied with Option III at the September 14, 2006 Alternatives Meeting.

C. Option III – The Stop

This option consists of installing two new stop signs on Main Street, one in front of the Lincoln Store (west bound) and one westerly of the Quaker Street intersection, (eastbound). The intent with this option is to slow the vehicle speeds along Main Street. No new changes to the roadway, intersection, or pedestrian facilities are included with this option. Although it was

recognized that a new realigned intersection would help to eliminate the conflicting vehicle turning movements and will help pedestrian circulation, this option tied with Option II at the September 14, 2006 Alternatives Meeting.

D. Preferred Alternative

As discussed previously, of the residents that attended the September 14, 2006 Alternatives Meeting, Option II and III tied by a show of hands. Of the three options, only Option II meets the purpose and need statement of the project. Option I helps to eliminate the vehicular conflicts at the Quaker Street intersection and incorporates some traffic calming techniques to help slow vehicular speeds but does not specifically address pedestrian needs. Option III will help to temporarily slow vehicular speeds along Main Street with the two new stop conditions. However, it does not directly address pedestrian safety nor does it address the conflicting vehicular movements at the Quaker Street intersection. Only Option II addresses the vehicular speeds, conflicting turning movements at the intersection and safe pedestrian circulation.



E. Burnham Hall

As part of this project, several issues associated with Burnham Hall were also investigated. The first was the existing gravel parking area westerly of the building and adjacent to the Gove Hill Road bridge. Several conceptual sketches were developed to help formalize and maximize the amount of parking possible for this site. As part of the new bridge construction, VTrans has received a temporary easement for construction from the Town for staging in this parking area and it is our understanding that they will restore the area when the bridge work is completed. The intent with the current conceptual sketch is to aid in the re-construction of this parking area.

F. Main Street Crosswalk

A new pedestrian crossing of Main Street in front of the Lincoln Store was also reviewed. This location was chosen based on the current and projected pedestrian needs primarily to access Burnham Hall and the Lincoln Store. It was also investigated to determine adequate sight distance and analyzed using the *AASHTO Geometric Design of Highways and Streets* for stopping sight distance. In both the eastbound and westbound lanes, the sight distance exceeds

the minimums (225-250 feet) with a 35 m.p.h. design speed for an object 3.5 feet tall. **VIII.**

RIGHT OF WAY

The total right of way width for Main Street (T.H. #1) and Quaker Street (T.H. # 3) is 3 rods wide or 49.5 feet through the project area. Based on existing documentation (current VTrans bridge plans), discussions with the Town of Lincoln and field observations, the 3 rod ROW appears reasonable. At this point in the investigation there appears to be only one area that may need additional right-of-way for the project, if Option I (the Y) is considered the proposed curbed island adjacent to the Lincoln Store will either need to be modified or additional right of way acquired.

IX. UTILITIES

During our site investigations, we did not find any obvious conflicts with underground municipal sewer or water services or above ground utilities.

There is an existing subsurface stormwater system on the north side of Main Street that could easily be modified to incorporate the curbing and other drainage improvements associated with this project, (Options I and II). Once an option is selected and an actual field survey and design scheduled, Dig Safe should be notified and any underground utilities located (1-800-225-4977).

X. NATURAL RESOURCES

The options were reviewed for potential impacts to natural resources. On-site observations as well as existing resource mapping and regulator reviews were used to make these assessments. It should be noted that the project is located within the adjacent roadways and within the existing road right-of-ways. There does not appear to be any impacts to surrounding natural resources, please refer to appendix A for additional information. This is a preliminary assessment and once an actual design is completed and the impacts are more clearly defined, these resources should be re-evaluated.

Wetlands – There are no mapped wetlands within the project area that are protected by either state or federal regulations.

Flood Zones –It does not appear that this project could impact the 100-year flood zone of The New Haven River or the surrounding tributaries. Sidewalks generally do not inhibit water flow and have little effect on flood capacity.

Hazardous Waste – There are three sites listed in the Department of Environmental Conservation's *Vermont Hazardous Sites List* in Lincoln. Site 992689 is the Lincoln Town Garage on 593 River Road, Site 20022985 is the Strickland Farm on 26 Mill Road and Site 20043220 is the South Lincoln Farm on 785 Grimes Road. None of these sites are in close proximity or will be directly affected by the project. (refer to appendix A for detailed information).

XI. CULTURAL RESOURCES

The proposed alignment options were reviewed for potential impacts to cultural resources. On site observations and the VTrans Resource Sheet for the Gove Hill Road bridge (BRO 1445 (25) were used to make these assessments. This resource sheet delineates both the limits of archaeological and historic resources. In this specific case the limits for impacts are delineated

at the edge of the existing pavement along both Quaker and Main Streets. As long as the proposed project does not extend past the existing pavement edge, no impacts are anticipated.

Historic – Historic resources are defined and protected under Section 4(f) of the U.S. Department of Transportation Act and under Section 106 of the National Historic Preservation Act. Due to the nature of the project, re-alignment of an existing intersection and construction of a sidewalk along an existing roadway and within the existing pavement limits, it is not anticipated that historical resources will be impacted.

Archaeological – Archaeological resources are defined and protected under Section 106 of the 1966 National Historic Preservation Act and assessed in compliance with 10 V.S.A. Chapter 151, 6086 (a)(8) [Act 250]. Due to the nature of the project, re-alignment of an existing intersection and construction of a sidewalk along an existing roadway and within the existing pavement limits, it is not anticipated that historical resources will be impacted.

XII. COST ESTIMATES and MAINTENANCE

Each option and alignment was reviewed for preliminary construction cost estimates. These estimates are intended for planning or budgetary purposes only. The cost estimates include Engineering, Municipal Project Management, and Construction Inspection costs as outlined in the *Report on Shared-Use and Sidewalk Unit Costs*, dated October 30, 2004 by the VTrans Bicycle and Pedestrian Program, Local Transportation Facilities section of the Project Development Division. The majority of the yearly maintenance costs for this type of a facility consists of snow removal. Assuming the sidewalks would need to be plowed 30 times per year, costs could range between \$1,000.00 to \$2,000.00. Many communities include the cost of snow removal in their yearly road maintenance budget and sub-contract for this service especially if the municipality does not already have sufficient equipment for snow removal. Winter maintenance of the sidewalk is not required by VTrans and it is up to the Town to decide, at their own expense, if the sidewalks should be plowed.

New subsurface drainage facilities should be inspected and cleaned yearly. Depending on the use and construction of the sidewalk, after approximately ten to fifteen years, minor repairs such as cracks, chips, etc. may also need to be included in a yearly maintenance budget.

Option I – The Y

Construction Cost	35,085.00
Engineering (20% of construction costs)	7,017.00
Municipal Project Management (10% of construction and engineering)	4,210.00
Construction Inspection (5 % of construction costs)	1,754.25
Contingency (10% of construction costs)	<u>3,508.50</u>
Total	\$83,151.75

Option II – The T

Construction Cost	\$118,237.00
Engineering (20% of construction costs)	23,647.40

Municipal Project Management (10% of construction and engineering)	14,188.44
Construction Inspection (5% of construction costs)	
5,911.85	
Contingency (10% of construction costs)	<u>11,823.70</u>
Total	\$173,508.39

Option III – The Stop

Installation Cost including new pavement markings	\$1,500.00
---	------------

XIII. PROJECT TIMELINE

A realistic timeframe for completion of this project is approximately three to five years. Assuming that the project is selected for construction level funding in the Spring of 2007, the survey, design and permitting could occur throughout the Summer and Fall of 2007 and the project could be ready for construction in the Spring of 2008. However, that may be a somewhat optimistic timeframe given that temporary construction easements will be necessary and that the project will need a Categorical Exclusion clearance from the Federal Highway Administration. Both of these tasks may take longer than several months and could potentially delay the project for another construction season, (Spring 2009).

Survey, Engineering and Design – 4-6 months

Permits and Clearances – 6-8 months

Contract Documents and Bidding Process – 2 months

Construction – 3-4 months

Currently, the two most popular funding sources for these type of projects are the VTrans Bicycle and Pedestrian Program (which requires only a 10% local match) and the Transportation Enhancements Program (which requires a 20% local match).

XIV. CONFORMANCE TO TOWN AND REGIONAL PLANS

The proposed project conforms to both the Town and Regional Plans (refer to letters in appendix A from the Addison County Regional Planning Commission and the Town of Lincoln Selectboard). The project is also in conformance with the *1998 VTrans Bicycle and Pedestrian Plan's* Visions and Goals as well as the Recommendations/Action Steps.

XV. RECOMMENDATIONS

We recommend that Option II proceed to the next step of development. This step will include a detailed survey of the intersection, the development of an existing conditions plan as well as the preliminary, final design and construction plans. At each step of project development it will be important to continue to involve the community with the opportunity for input into the design. We also recommend that the steering committee continue to meet to guide the development of the project. This committee could generate an application for construction level funding and coordinate the communities match and agreements for future maintenance of the sidewalks.

This option will improve the safety and mobility of pedestrians, including school children, relieve automobile and pedestrian conflicts and provide for alternative transportation between existing, residential, recreational and municipal centers. Providing a safe pedestrian facility to allow students and residents to safely cross Quaker Street will continue to be a priority for many residents. Linking the residences and businesses along the Main Street with Burnham Hall will help to promote safe pedestrian mobility, reinforce the village center and warrants the expenditure of public funds. This project meets the purpose and need statement and is compatible with local regional planning efforts, both of which encourage the development of pedestrian facilities to provide safe alternative transportation opportunities.

EVALUATION MATRIX Lincoln Village Center Study				
The following evaluation matrix contains a list of potential issues and concerns with all possible affected parties who may have a concern with a proposed alignment. A [No] in a space indicates that there are no apparent concerns, impacts or permits required, and a [Yes], indicates that there is a concern associated with the alternative, or a permit may be required. Cost estimates are conceptual and intended for planning purposes only.				
		Option I The Y	Option II The T	Option III The Stop
COSTS	TOTAL (approx)	\$83,151.75	\$173,508.39	\$1,500.00
IMPACTS	Agricultural Lands	No	No	No
	Archaeological	Possible*	Possible**	No
	Historic Struct. and Sites	Possible*	Possible**	No
	Hazardous Materials	No	No	No
	Threat & Endang. Species	No	No	No
	Public Lands	No	No	No
	LWCF – Section 6(f)	No	No	No
	Noise	No Change	No Change	No Change
	Floodplain	No	No	No
	Fish & Wildlife	No	No	No
	Wetlands	No	No	No
LOCAL & REGIONAL ISSUES	Concerns	Improves Safety	Improves Safety	Improves Safety ***
	Community Character	Improved	Improved	No change
	Economic Impacts	No	No	No
	Conf. To Reg. Trans. Plan	Yes	Yes	Yes
	Satisfies Purpose & Need	Yes	Yes	Yes
PERMITS	Act 250	Possible	Possible	No
	401 Water Quality	No	No	No
	404 COE Permit	No	No	No
	Stream Alteration	No	No	No
	Conditional Use Deter.	No	No	No
	Stormwater Discharge	No	No	No
	Lakes & Ponds	No	No	No
	T & E Species	No	No	No

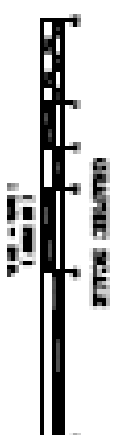
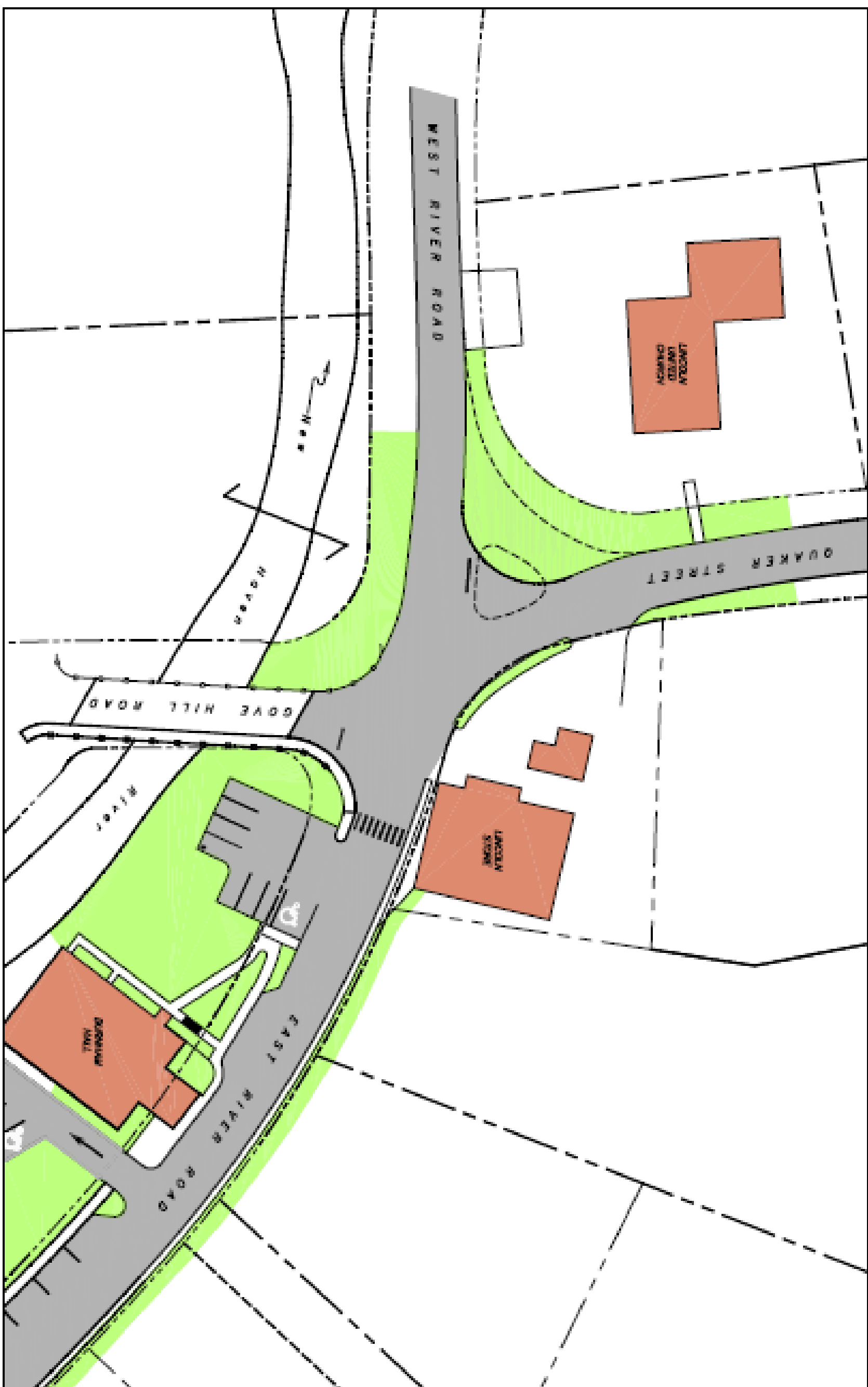
Town of Lincoln Village Center Study

	SHPO	Possible	Possible	No
OTHER	NEPA – Categorical Excl.	Yes	Yes	No
	Utility relocation	No	No	No
	Land Acquisition	Yes	Yes (temporary)	No
VIABILITY		Good	Good	Good

* Arch and Historic resources may be impacted if the new curbed island adjacent to the Lincoln Store is located outside of the existing edge of pavement, (Option I)

** Arch and Historic resources may be impacted if the new sidewalk in front of the church is located outside of the existing edge of pavement, (Option II).

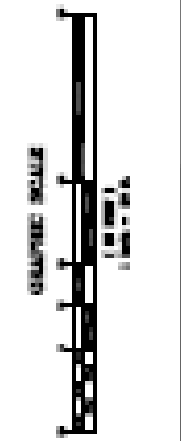
***Option III may help to reduce vehicular speeds on Main Street, but does not address the conflicting turning movements at the Quaker Street intersection nor will it improve pedestrian circulation.

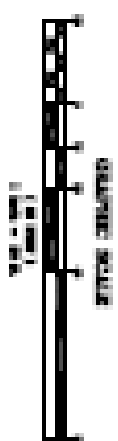
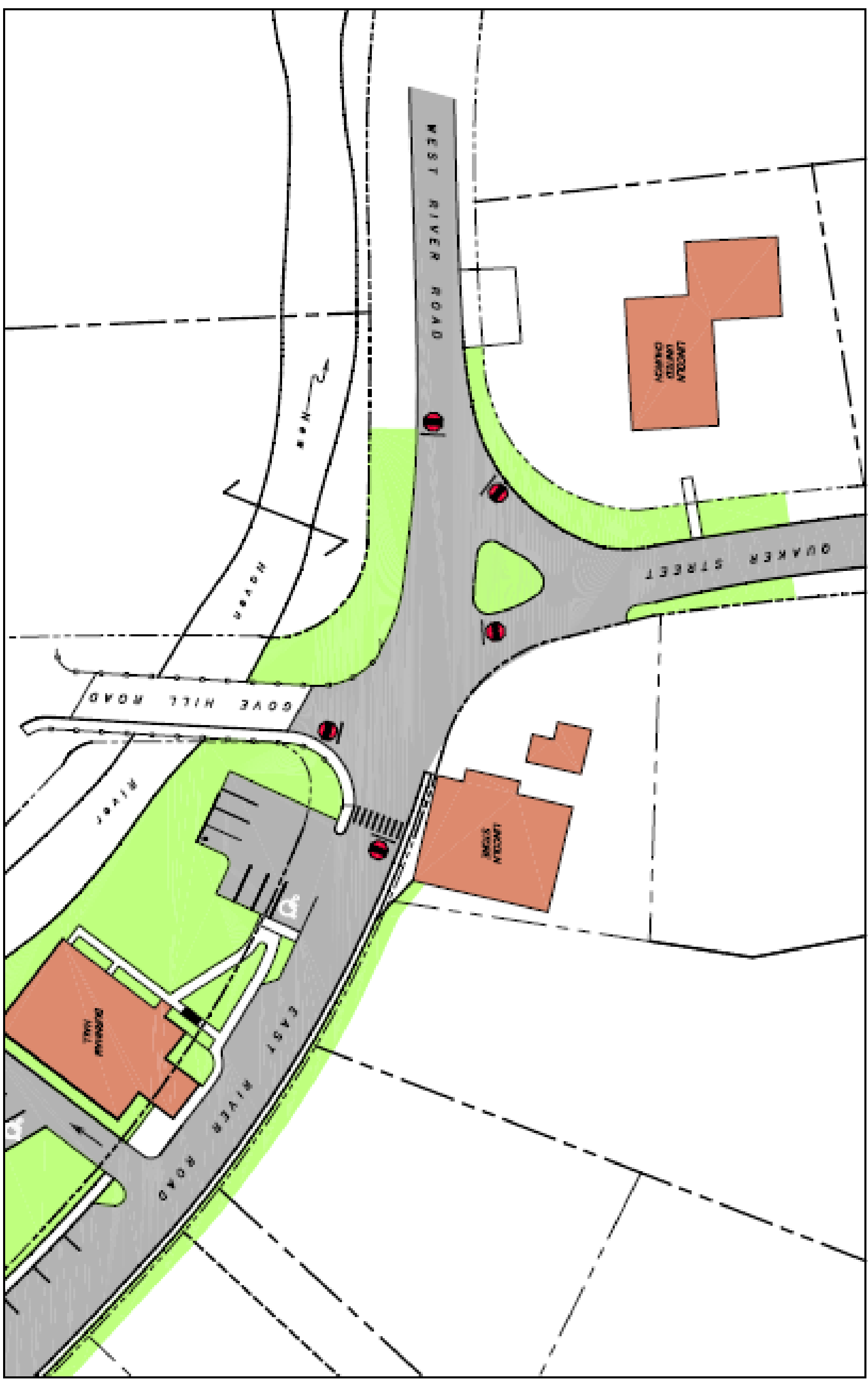



OPTION 1		DATE: 10/1/09
LINCOLN VILLAGE CENTER STUDY		PROJECT NO: 51
LINCOLN, VERMONT		PROJECT BY: 7/9/09
STUDY ENGINEERING, INC.		
25 Jay Street		
South Ferrisburgh, VT 05773		
Tel: 802-255-1111 Fax: 802-255-1112		
Author	Drawn	Check
10/1/09	10/1/09	10/1/09
10/1/09	10/1/09	10/1/09



DATE	10/1/08
PROJECT	OPTION 2
LOCATION	LINCOLN VILLAGE CENTER STUDY
PROJECT NO.	79059
PROJECT NAME	LINCOLN VILLAGE CENTER STUDY
PROJECT ADDRESS	2000 N. 10th St., Lincoln, NE 68502
PROJECT PHONE	402.441.1111
PROJECT FAX	402.441.1112
PROJECT EMAIL	lincoln@lincolnvt.com
PROJECT WEBSITE	www.lincolnvt.com





DATE TIME NAME PHONE FAX E-MAIL	 STUDENT EVALUATION <small>FOR THE LINCOLN VILLAGE CENTER STUDY</small>	OPTION 3	
		LINCOLN VILLAGE CENTER STUDY LINCOLN, VERMONT	DATE 10/2/04 DRAWN BY 51 PROJECT NO. 7859

Appendix G

Funding Options

APPENDIX G

Funding Opportunities

(from the FHWA Website: <http://www.fhwa.dot.gov/environment/bikeped/bp-guid.htm#bp4>)

	NHS	STP	HSIP	SRTS	TEA	CMAQ	RTP	FTA	TE	BRI	402	PLA	TCSP	JOBS	FLH	BYW
Bicycle and pedestrian plan		*				*						*	*			
Bicycle lanes on roadway	*	*	*	*	*	*		*	*	*					*	*
Paved Shoulders	*	*	*	*	*	*				*					*	*
Signed bike route	*	*		*	*	*									*	*
Shared use path/trail	*	*		*	*	*	*			*					*	*
Single track hike/bike trail							*									
Spot improvement program		*	*	*	*	*										
Maps		*		*		*					*					
Bike racks on buses		*			*	*		*	*							
Bicycle parking facilities		*		*	*	*		*	*							*
Trail/highway intersection	*	*	*	*	*	*	*								*	*
Bicycle storage/service center		*		*	*	*		*	*				*	*		
Sidewalks, new or retrofit	*	*	*	*	*	*		*	*	*					*	*
Crosswalks, new or retrofit	*	*	*	*	*	*		*	*						*	*
Signal improvements	*	*	*	*	*	*										
Curb cuts and ramps	*	*	*	*	*	*										
Traffic calming		*	*	*									*			

	NHS	STP	HSIP	SRTS	TEA	CMAQ	RTP	FTA	TE	BRI	402	PLA	TCSP	JOBS	FLH	BYW
Coordinator position		*		*		*							*			
Safety/education position		*		*		*					*					
Police Patrol		*		*							*					
Helmet Promotion		*		*	*						*					
Safety brochure/book		*		*	*	*	*				*					
Training		*		*	*	*	*				*					

KEY

NHS	National Highway System	BRI	Bridge
STP	Surface Transportation Program	402	State and Community Traffic Safety Program
HSIP	Highway Safety Improvement Program	PLA	State/Metropolitan Planning Funds
SRTS	Safe Routes to School Program	TCSP	Transportation and Community and System Preservation Pilot Program
TEA	Transportation Enhancement Activities	JOBS	Access to Jobs/Reverse Commute Program
CMAQ	Congestion Mitigation/Air Quality Program	RTP	Recreational Trails Program
FLH	Federal Lands Highway Program	FTA	Federal Transit Capital, Urban & Rural Funds
BYW	Scenic Byways	TE	Transit Enhancements

BROADREACH

Planning & Design

PO Box 321
Charlotte, Vermont 05445
802-425-5061



Heritage Landscapes LLC