



TOWN OF GREAT BARRINGTON **LAKE MANSFIELD** RECREATION AREA IMPROVEMENTS

17 JUNE 2016

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All images were produced by Kyle Zick Landscape Architecture, Inc. unless noted otherwise.

Acknowledgements

Lake Mansfield Improvements Task Force

Members of the Task Force during the 2015 and 2016 project included:

- Christine Ward, Chair/Citizen-at-large
- Deb Phillips, Citizen-at-large
- Joe Sokul, Department of Public Works Superintendent
- Jessica Dezieck, Conservation Commission Member (2016)
- Gaetan Lachance, Conservation Commission Member (2015)
- Dale Abrams, Lake Mansfield Alliance Member
- Nina Evans, Lake Mansfield Alliance Member – Alternate
- Brandee Nelson, Planning Board Member
- Bill Cooke, Selectboard Member
- Kathy Plungis, Parks Commission Member
- Amy Pulver, Department of Public Works/Planning Department Administrator
- Chris Rembold, Town Planner (Ex-officio)
- Shep Evans, Conservation Agent (Ex-officio)

Consultant Design Team

Kyle Zick Landscape Architecture, Inc. – Landscape Architecture & Planning
Woodard & Curran – Civil & Stormwater Engineering
New England Environmental, Inc. – Environmental Consulting

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Executive Summary

The team of Kyle Zick Landscape Architecture, Inc. (KZLA) and their sub-consultants Woodard & Curran and New England Environmental was hired by the Town of Great Barrington in August 2015 to complete the Lake Mansfield Comprehensive Improvements Planning project. While the Town has produced a number of studies and plans over the years—including the Community Master Plan, a traffic and hydrological study of Lake Mansfield Road, Castle Hill Avenue Stormwater Improvements, Knob Hill Stormwater Planning, and concepts for the Lake Mansfield Conservation Forest & recreation area—the KZLA team was charged with combining all of this thinking with a broad public input process and our professional expertise to produce a comprehensive improvement plan for the lake, the conservation forest, the recreation area (park and beach), and the boat launch.

The Town's goal with this comprehensive planning project is: "To provide improvements for the Lake Mansfield Recreation Area that will support the health of the environment and provide safe access and recreational opportunities for all." The plan concentrates on three focus areas that have significant impact on how the entire space is developed: Lake Mansfield Road, the recreation area parking (situated between the beach and trailhead), and the boat launch on the southern end of the site. There are significant issues with each of these areas.

Lake Mansfield Road is in very poor condition. The pavement is extensively cracked, the sub-base has been comprised, and the pavement is sloughing into the lake at points where wind and wave action and the rising lake level has eliminated the vegetated buffer. Traffic volume is moderate but the road is used as a cut through for residents avoiding Main Street. Traffic speeds and larger vehicles using the road are in direct conflict to those visitors who use the area for walking, jogging or biking. Both the gravel parking area at the beach and the boat launch at the south end of the lake pitch towards the water, and untreated stormwater washes sediment into the lake, carrying pollutants from cars into the water.

Accessibility is another concern, particularly at the beach and the beach parking area, where the land drops more than eleven feet in grade from the existing trailhead to the water level of the lake. The existing raised cross walk helps to slow traffic speeds at the road crossing, but it also creates an impediment to mobility-impaired beach-goers. Despite having an accessible trail through the conservation forest, no accessible parking spaces have been provided.

From November 2015 through March 2016, the Town hosted a series of public forums and followed each with an on-line survey. The surveys allowed the community an anonymous venue to share their thoughts and desires for the project. In the latter two surveys and public forums, the consultant team presented a series of design studies to gain feedback from the community. Each of the studies were evaluated based on the following criteria: potential impacts on water quality, lake health and habitat; potential impacts on safety for all users; potential impacts on access to and through the area; estimated construction costs; permitting requirements; and, possible support funding (federal/state funds, private grants, etc.).

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This recommended plan combines the preferred options for each of the focus areas, as well as other improvements to the recreation area (site amenities such as play structures, signage, seating, and bike racks, etc.). Based on the project goals, the various design studies (including those prepared prior to this planning project), public input, and the consensus of the Lake Mansfield Improvements Task Force, the recommendation for Lake Mansfield Road is to convert it to one-way traffic from the intersection of Knob Hill Road to the Lake Mansfield recreation area parking, heading south to north. This plan realigns the road within the thirty-foot right-of-way, and includes a five- to six-foot wide pedestrian recreation path alongside the road, and separated from the road by a three-foot wide vegetated buffer.

The recommended one-way road and recreation path provides important advantages over either a two-way road or a closed road. First, it provides enough room along the edge of the lake for much-needed bank stabilization. Stabilizing the bank will provide a vegetated buffer to stormwater pollution, will maintain the road edge against continued degradation from wind and wave action, and vegetation along the bank provides wildlife habitat. Second, it provides a safe path for pedestrians along the lake edge. Third, the narrower width for vehicles will slow traffic speeds and reduce overall volumes, enhancing the safety and experience of all lake area users.

The recommended parking plan for the beach area moves the parking north of its existing location. This serves to move the parked cars away from the beach and improve the view when arriving from the north on Lake Mansfield Road. The recommended parking area accommodates twenty permanent, paved and striped parking spaces (including three handicap accessible spaces) plus an additional thirty overflow or seasonal spaces. The parking has been kept to the east side of the existing alignment of Lake Mansfield Road with a drop-off area located on the beach side so that mobility-impaired visitors, children and/or bags can be unloaded prior to parking. A handicapped-accessible route has been included to connect the new parking area with the lake and beach amenities.

The recommended plan for the boat launch includes six parking spaces which meets the Massachusetts Department of Fish and Game's Office of Fishing and Boating Access' request. The spaces have been located on the west side of the Hollenbeck Avenue right-of-way to keep parked vehicles out of the viewshed of the lake.

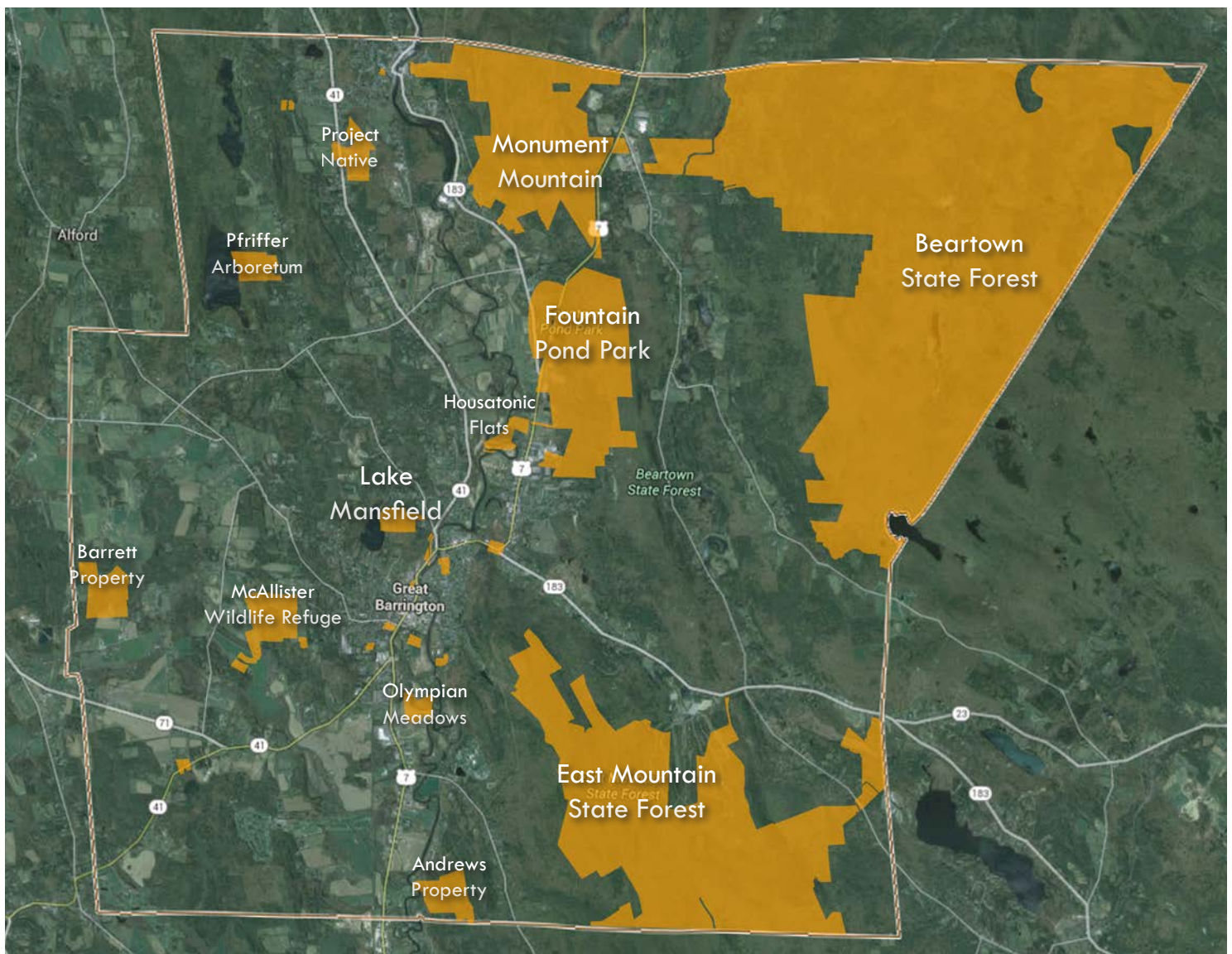
In addition to these major components, the consultant team evaluated other site features of the project. Lake health was reviewed and recommendations made for controlling aquatic vegetation and aquatic weed management. And, options have been included for replacing the lake's outlet control structure to alleviate the flooding along Lake Mansfield Road.

Cost estimates—both for construction, as well as for design and permitting—were prepared for the final design components. Funding opportunities have also been identified, permitting requirements identified, and a phasing plan for a recommended sequencing of work is included at the end of the document.

Section I: Introduction

Project Summary

Lake Mansfield is an approximately 30-acre body of water, located within the Housatonic River watershed, less than one mile from downtown Great Barrington. The lake is a Massachusetts Great Pond and is a four-season recreational and scenic resource. Swimmers, walkers, runners, bikers, canoeists, and kayakers of all ages enjoy its lovely setting and tranquil waters as well as its beach area, play area, and the boat launch. In the winter, ice skaters, and ice fisherman frequent the lake whenever ice conditions permit. Lake Mansfield is unusual in Berkshire County: it is close to downtown and publicly accessible, but it is free of docks, boat houses, and other structures on the lake shore.



Lake Mansfield Recreation Area in context of other regional recreation areas and parks

The 2013 *Community Master Plan: Town of Great Barrington, MA* describes the area:

Residents and visitors alike frequent Lake Mansfield. It is unusual in this area, being both close to downtown and publicly accessible yet free of docks, boat houses, and other structures on the lake shore. After a decade of cleanup and restoration efforts by the Lake Mansfield Alliance and the Lake Mansfield Improvement Task Force the lake is a popular year-round recreational retreat for the entire town. But the lake road is a serious concern. The vegetated buffer that once captured non-point source pollution is eroding rapidly. Speeding cars, increased pedestrian activity, and a narrowing paved roadway create a dangerous situation. (30)

Lake Mansfield History in Brief

The following are key dates from Lake Mansfield recreation area history from the Lake Mansfield Alliance's website (www.lakemansfield.org).



*Historic postcard of Lake Mansfield, date unknown;
Courtesy of cardcow.com*

- **1884:** Great Barrington Fire District established as a resource for fire fighting as well as a drinking water reservoir and public access was prohibited.
- **1942:** Lake Mansfield recreation area established as a public swimming location for the Town of Great Barrington, despite the fact that the Fire District still used the lake as a source for water.
- **1944:** Lake Mansfield Road was laid out as a town road, though it is not paved. Private land was taken “for public necessity and convenience” for the road. (Dlugosz, Ron. *Lake History*, www.lakemansfield.org. 2016)

- **1959:** Lake Mansfield beach created (on private land)
- **1973:** The Town established a beach area on the northern end of the lake by purchasing just under thirty acres. The property also includes the existing park area, conservation forest, and trails.
- **1974:** A short portion of Lake Mansfield Road was diverted away from the beach area and the gravel parking area was developed. The road is paved sometime during the middle to late 1970s.
- **2007:** The lake was transferred from the Fire District to the Town as it was no longer used as a water resource.

Lake Mansfield Improvements Task Force

The Town's Lake Mansfield Improvement Task Force (hereafter, the Task Force), established in 2006, consists of representatives from Town government, including the Selectboard, Planning Board, Conservation Commission, Parks Commission, Lake Mansfield Alliance (a local nonprofit group), the Department of Public Works, and citizens-at-large, and is assisted by the Town's Planning Department. The Task Force has developed a comprehensive report (dated 9 February 2015) which summarizes the work it has undertaken to protect and steward the lake, and to plan for future use of the resource.

At the initial meeting with the Task Force, KZLA asked each of the present members what they felt the most significant issues with the site were and/or what was their vision for the landscape. Responses included:

- Parking was addressed as a concern at the Lake, however caution was expressed at the notion that parking facilities should be expanded. Perhaps, instead, the parking should be designed so to be appropriate to the space and the natural resources. The potential to move the parking area further away from the water's edge is a possibility. This would allow a green edge to the parking. The parking lot is plowed in the wintertime by DPW.
- Flooding at the outlet was also identified. The current outlet is a twelve-inch diameter PVC pipe. The flooding is an issue both of the lake level and the capacity for the outlet pipe to flow. It was noted that flooding occurs after heavy rains as well as in the winter. Part of the issue is surmised to be that fact that the fire department no longer uses Lake Mansfield as its water source. This use helped to control the water level and since the use has ended the flooding has gotten worse.
- Safety along Lake Mansfield Road was identified. Many people use Lake Mansfield Road as a walking route and with the broad curve to the south of the roadway, the two-way traffic and the lack of shoulders contribute to the safety concern. It is particularly popular for families, often with strollers. It is also a part of the Town's 3.5-mile walking loop which connects to downtown/Main Street, as well as the Riverwalk on the Housatonic River.
- Accessibility issues exist, especially for the beach access and parking area. The Lake Mansfield Conservation Forest trails include accessible trails.
- The size and condition of the boat landing is also a concern. The boat launch is now entirely on town-owned land. Beartown State Forest (on the Great Barrington / Monterey town line) was identified as a potential example of a boat launch which functions well for its conditions.



*Historic postcard of Lake Mansfield, circa 1908;
Courtesy of cardcow.com*

- A better balance of transportation modes, rather than a landscape dominated by vehicles.
- A road to and through a park but which does not dominate the park landscape.
- A linear recreation park (from several members) where visitors can safely walk and enjoy the sunset and which also reinforces connections through the community.
- Redevelopment of the outlet with the opportunity to control flooding and high water levels.
- A place to celebrate the natural world.
- It was expressed that an education component to the planning process is key. Many studies have been completed in the past for various components of the landscape, ensuring that the public is part of this planning process and understand what is being undertaken is essential.

Project Goals & Objectives

As defined by the Task Force, the goal for the Lake Mansfield Improvements project is as follows:

To provide improvements for the Lake Mansfield Recreation Area that will support the health of the environment and provide safe access and recreational opportunities for all.

The overarching objectives for Lake Mansfield Recreation Area Improvements project include:

- Restoring natural habitat and vegetated buffer zone where the shoreline has eroded away
- Redesigning beach/forest area parking to improve stormwater management/sediment control and provide safe and accessible pedestrian access to the lake and play/picnic area.
- Improving lake outlet control structure to alleviate flooding issues at northern end of the lake
- Redesigning the boat launch to reduce erosion and lake sedimentation and improve parking layout
- Improving stormwater management on Knob Hill Road to reduce erosion and lake sedimentation

The intent of the Lake Mansfield Improvements project is to:

- Develop a comprehensive plan for implementation of improvements
- Illustrate the improvement options
- Identify all environmental and permitting requirements related to each improvement
- Recommend a phasing/sequencing plan and schedule for improvements including permitting
- Develop estimated costs for design, permitting, and construction

Based on the project goal, the Task Force identified a series of criteria with which to evaluate all planning alternatives:

- Impacts on water quality, lake health and habitat
- Impacts on safety for all users
- Impacts on access to and through the area
- Construction costs (estimated)
- Permitting requirements
- Possible support funding (federal/state funds, private grants, etc.)

Community Master Plan Goals

In October 2013, Great Barrington published its *Community Master Plan*. The Master Plan establishes a series of goals in various sectors of planning such as land use, natural resources, open space and recreation. The goals that address Lake Mansfield and the recreational use are included below:

- Goal OSR 3: Parks, open space and recreational area should serve the changing needs of the community
 - 3.1: Continue the Parks commission initiatives of making parks multi-dimensional.
 - 3.3: Support efforts to make resources accessible to those with physical disabilities. [...] The recently-completed trail in the Lake Mansfield Forest, completed by the Lake Mansfield Alliance with a combination of State funds, partnerships, and sweat equity, is a model for this goal.
 - 3.4: Add picnic tables, benches, chess tables, and other amenities at existing playgrounds and parks, to be enjoyed by those who prefer passive recreation.
- Goal OSR 5: Provide linkages between our recreation resources and community facilities, neighborhoods, and village centers.
 - 5.3: Accommodate bike lanes, sidewalks, and crosswalks when any road is rehabilitated.
- Goal OSR 9: Protect biodiversity, habitat, and natural resources.
 - 9.1: Track, monitor and combat invasive species.
 - 9.2: Protect, preserve, and connect habitat areas to one another.
 - 9.3: Minimize stormwater runoff.
 - 9.4: Ensure vegetative buffers protect lakes, ponds, rivers, and streams wherever possible.
 - 9.5: Continue stormwater improvements and planning at Lake Mansfield. Pay special attention to Lake Mansfield Road, the boat launch and Knob Hill road, and the beach area. Engineering and designs for improving Lake Mansfield Road must account for the safety and enjoyment of all users of the recreation area, including bicyclists, fishermen, runners and walkers, as well as vehicles. Work with Bard College at Simon's Rock to establish a long term water quality monitoring and education program.

Existing Conditions

Vehicular circulation and parking

Lake Mansfield Road is in very poor condition and, without significant intervention, it will get worse. Pot holes, heaving, and extensive cracking are serious issues and are symptomatic of the poor drainage and composition of the road base. The road base is saturated, due to water from the lake permeating under the roadway as well as poor drainage on the eastern edge of the road. The trapped water freezes in winter, breaking up the road and sloughing chunks of pavement into the lake at points. The freezing and thawing, combined with wind and wave action and the rising lake level, has seriously compromised the long-term integrity of the road and completely eliminated the vegetated buffer between the road and the lake itself. The eroding bank and disappearance of the buffer presents serious safety problems for recreational

users and motorists, and it negatively impacts the water quality and long term health and natural habitat of the lake.



Pavement cracking along Lake Mansfield Road, June 2015



Road edge sloughing off into the lake, June 2015

Lake Mansfield Road acts as a dam to the lake and, as identified in the *Berkshire County Hazard Mitigation Plan*, a failure of the road could partially drain the lake and cause downstream flooding. The lake outlet crosses under Lake Mansfield Road at the north end of the lake within the conservation forest. This is the only discharge point for the lake. Because the outlet is a narrow pipe (twelve inches in diameter) it appears to trap debris and often freezes in wintertime flooding the road and making it impassable. In addition, the lake level has risen over the years since the fire department no longer uses the lake as a water resource.

The existing road alignment presents additional issues. Curves in the road create short sight lines for motorists, raising safety concerns. Traffic studies have shown that between 500 to 600 vehicles drive Lake Mansfield Road everyday with flow being fairly equal in either direction. While this is not a significant volume, the condition of the road and the speed at which most vehicles drive it compound the problem. The road is used as a cut through for residents wanting a fast alternative to Main Street and its seasonal traffic congestion. And, traffic speeds and larger vehicles using the road are in direct conflict to those who use the area for walking, jogging, biking and fishing.



Flooding of road near outlet, February 2016;
Courtesy of LMITF



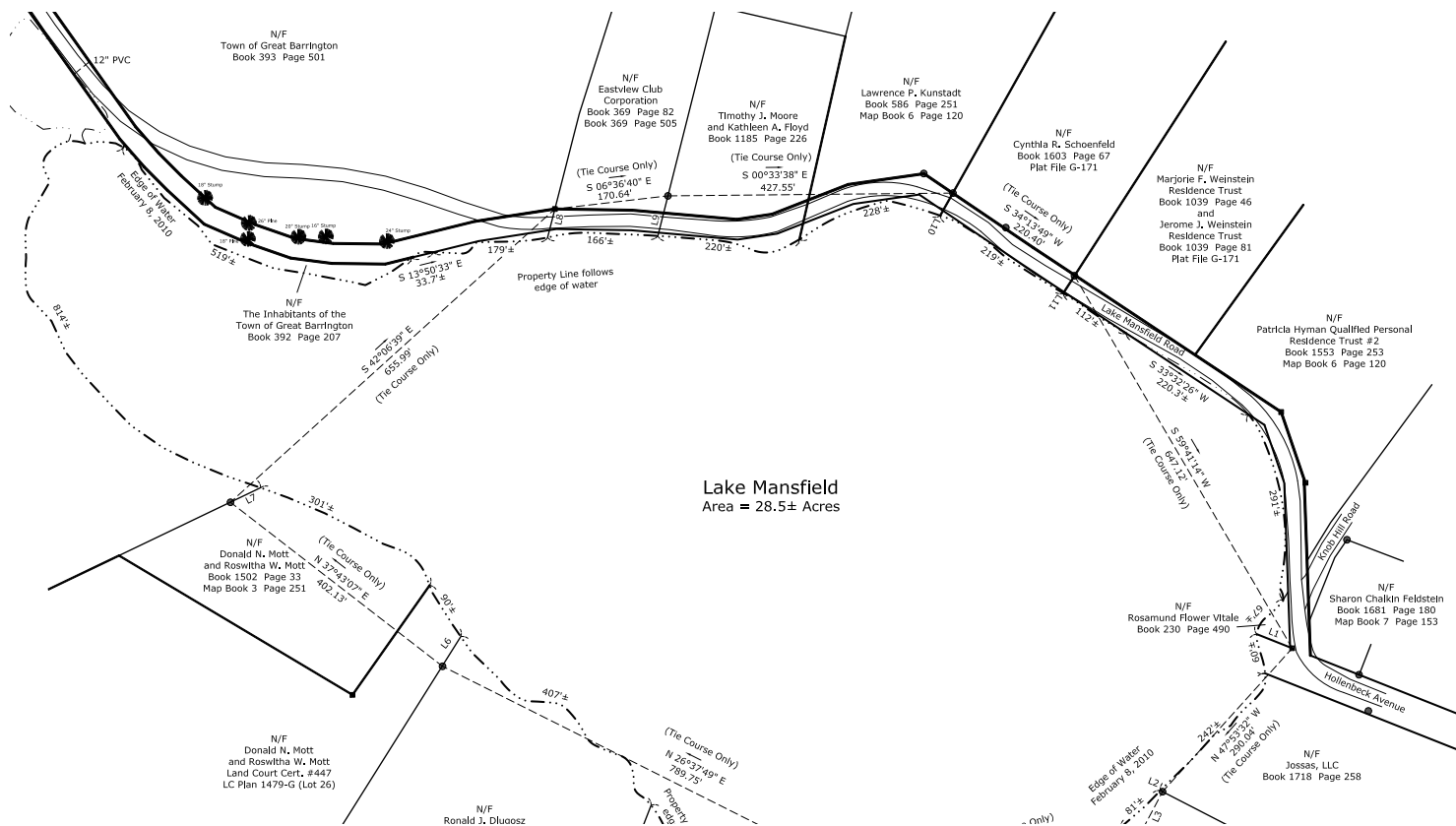
Outflow pipe on east side of road December 2015;
Courtesy of Woodard & Curran



Looking into the outflow pipe, December 2015;
Courtesy of Woodard & Curran



Roadbed widths along Lake Mansfield Road project extents, 2015



Close-up of 2010 “Plan of Land prepared for Town of Great Barrington, Lake Mansfield” as prepared by ForeSight Land Services of Pittsfield, Massachusetts

Lake Mansfield Road varies greatly in width—from seventeen feet wide to more than twenty-four feet wide—between the recreation area parking and the boat launch. (See the figure, following.) While a pinch point is perceived near Whale Rock, it is actually one of the wider portions of the road. However, ledge outcroppings—like Whale Rock—along with the certified vernal pool, do create constraints for development in the road right-of-way, such as realigning the roadway. Joe Sokul, Superintendent of the Department of Public Works, confirmed that the width of the right-of-way for Lake Mansfield Road is thirty feet wide. The road does not necessarily pass through the middle but meanders through it, and tends to fall closer to the lake side than the uplands.

The curvilinear nature of the roadway helps—to some extent—to both reduce traffic speeds and volume. The curves allow changing views for both drivers and people using the road for recreation. The most northern section, by the recreation area parking, was relocated decades ago so that the road is not directly adjacent to the beach and play areas which is appreciated by many of the park’s users.

The Town’s Rules and Regulations Governing the Subdivision of Land, date 14 February 2008, includes Road Design Criteria and Standards. The traffic analysis prepared by Tighe & Bond in June 2013, the portion of Lake Mansfield Road included in this study noted 550 to 575 vehicles in two locations with slightly more traffic heading north (290 to 302 northbound versus 260 to 273 headed southbound). (Draft Lake Mansfield Road Study Technical Memorandum, dated 5 September 2013). Based on this traffic study, the Road Design Criteria standards classify Lake Mansfield Road as a Collector Road and therefore recommend a twenty-four foot wide road with three-foot shoulders on both sides and sidewalks on both sides, in a fifty-foot right-of-way. Clearly, these standards would not be possible given the existing thirty-foot right-of-way.

A tabletop pedestrian crossing is located between the parking lot and beach access gateway in an effort to slow traffic passing by the recreation area. It was noted that when the parking lot is not full, vehicles have been seen driving through the gravel parking in order to avoid driving over the tabletop.

The existing gravel parking located between the conservation forest and the park is pitched towards the lake and stormwater runoff is eroding the beach, washing sediment into the lake, and carrying pollutants from cars into the water. An informal parking area without designated spaces such as this typically means that space is used inefficiently as drivers will park vehicles where they like. The parking area is often filled to capacity on summer (July and August) weekends and holidays. Parking spills out along Lake Mansfield Road so that vehicles parked on both sides choke the traffic flow down to one lane. Community members have expressed a desire that the lot needs to accommodate vehicles more efficiently.

In the peak of the summer season, particularly on weekends, the parking overflows the lot and visitors park on both sides of Lake Mansfield Road. This creates a constrained roadway and increases the potential for conflicts between vehicles and pedestrians.

Not all of the public uses the lake as a swimming facility, many visitors enjoy coming to the site to enjoy sunsets over the lake or for reading and relaxing overlooking the scenic resource. The current informal layout of the parking lot allows the space to be used in a variety of ways and accommodates head-in parking at the trailhead, as well as parking to overlook the beach.

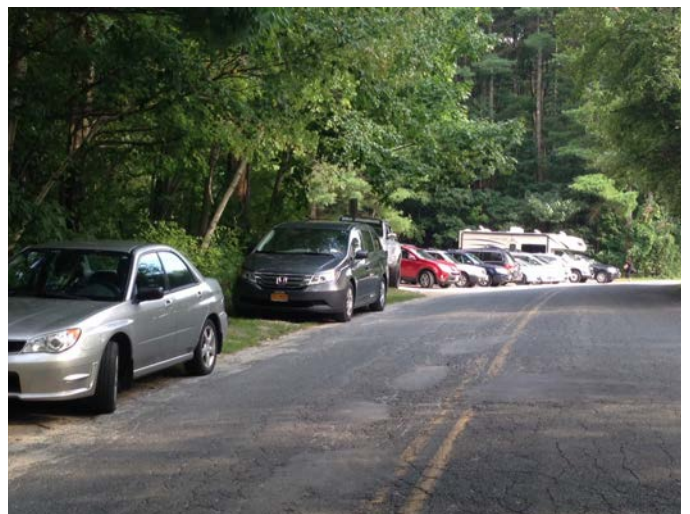
The boat launch is on the south side of the lake and is as a put-in location for non-motorized boats (typically, canoes, kayaks and stand-up paddle boards) and as a dog swimming area. In addition, the boat launch is often used by cross-lake swimmers since the lack of ropes (and crowds) allows an easier access, however the aquatic weeds are reported to be an issue in this area.



Tabletop pedestrian crossing at beach, June 2015



Birds-eye view of recreation area parking, January 2016



Overflow beach parking, August 2015; Courtesy of LMIF



Boat launch at south end of the lake, November 2015



Stormwater runoff, ice and snow at Lake Mansfield & Knob Hill Roads, date unknown; Courtesy of LMITF



Launch point and erosion in parking area of boat launch, June 2015



Pedestrian on the northern portion of Lake Mansfield Road, September 2015

The boat launch itself is in need of improvement. It's a problem area for non-point source pollution and lacks parking space. (Stormwater runoff and its pollution is discussed in a following section.) Like the recreation area parking, the boat launch is unpaved and informal. The informal dirt lot accommodates approximately up to six vehicles with no regulations on the use of boat trailers. The majority of the land that makes up the boat launch was recently acquired by the Town.

Lake Mansfield Road is used for walking, biking, and running along the lake edge. A bike rack is provided at the beach and some community members have expressed a desire for better bike racks. The width of the road and its perceived congestion may impact the level of use as a recreation/commuter route by cyclists.

Recreation area: beach and park

The Lake Mansfield recreation area provides an array of activities including playground facilities, picnic benches, and cooking grills. The lake and associated forest draw locals plus visitors from surrounding towns who come to canoe or kayak, hike, fish, and swim.

In recent years, Berkshire South Regional Community Center has provided park management for the Town's Parks and Recreation Commission. In their report to the Commission summarizing the 2015 season they recorded just over 13,000 visits to the park over the season, with an average daily number of visits of 163 and an average of twenty-two visitors per hour. They reported the busiest time of the day as 4:30 p.m. and the slowest at 11:30 a.m.; the busiest day of the week as Saturday and the slowest as Thursday.

Lake Mansfield is the only public swimming facility in town. Lifeguards are on duty 10:30 a.m. to 5:30 p.m., seven days a week from Memorial Day to Labor Day with two lifeguards on duty. Children's swimming lessons are also offered. (Berkshire South Regional Community Center reported that thirty-seven swim lessons were offered in 2015.) The lessons ran twice per week with two lessons for three weeks at a time. Yoga is offered during the month of July three times a week (Monday, Wednesday and Friday) between 8:00 to 9:00 a.m.

Only non-fuel and non-motorized boats are permitted in Lake Mansfield. This restriction dates to its former use as a drinking water source. The most frequently used crafts are kayaks, canoes, and stand-up paddle boards both for recreation and for fishing. Typically, no more than six boats at a time are observed in the lake and are launched from the boat launch on the south side of the lake. A second smaller launch is used just south of the beach by the bike rack but it is very steep and causing erosion of the bank. There is no parking associated with this launch; in fact, there is signage that states "emergency vehicle parking only" but that doesn't appear to deter visitors from parking there.



Canoeing and fishing on the lake, June 2015



The beach at Lake Mansfield, September 2015



Eroded bank south of the beach, June 2015



Signage at the beach and park, June 2015



Shoveling snow for hockey on the lake, date unknown; Courtesy LMITF



Portion of the conservation forest, September 2015

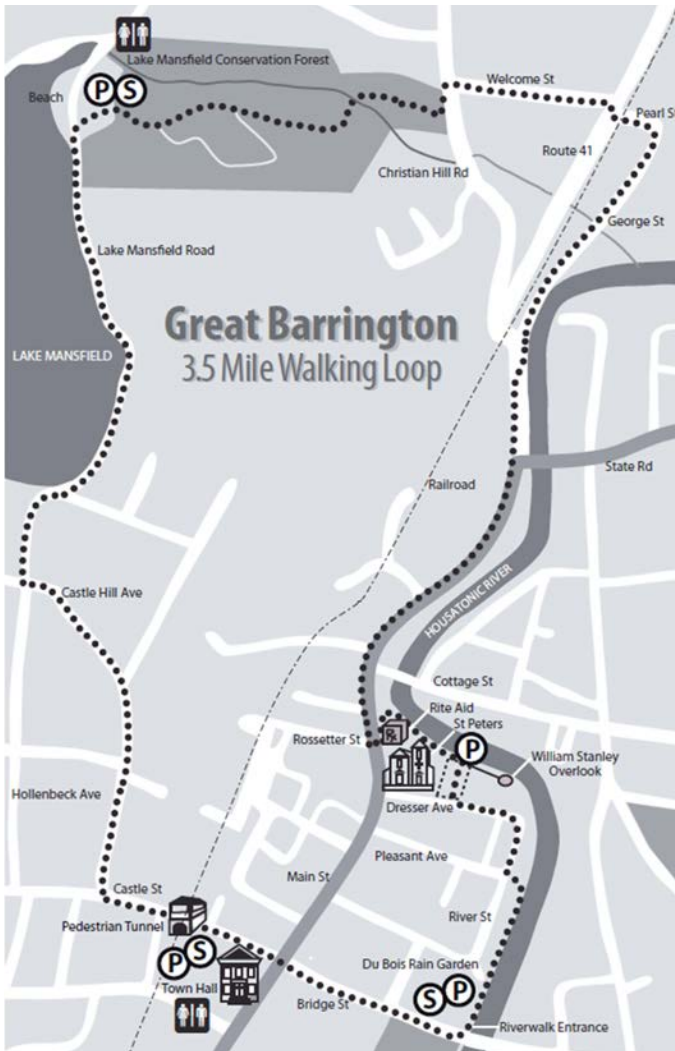
An annual fishing derby is held in June and the lake is stocked with trout in the spring by the Massachusetts Department of Fish and Game. Fishing typically occurs at the boat landing and at points along the road however it has been noted that fewer people are using the areas where vegetation along the bank has been lost. Heavy aquatic weed growth and traffic on the road make fishing difficult in late summer. Fishing is not permitted at the beach area.

Winter activities include ice skating and ice fishing. Cross-country skiing and snowshoeing are also accommodated on the forest trails.

Lake Mansfield Conservation Forest is a 29-acre woodland with nearly a mile of trails in the forest. The conservation area connects the beach area at Lake Mansfield to Christian Hill Road, via a bridge and boardwalk with lumber from felled black locust trees. A portion of the forest trail system is accessible to people with disabilities. Future plans include connecting to Christian Hill Commons and Knob Hill neighborhoods. The forest is also a popular destination for bird watchers.

The trail system is part of the three-and-a-half-mile loop which connects the Lake Mansfield conservation and recreation area, to downtown Great Barrington along Main Street, and the Housatonic Riverwalk. The Town's walking loop incorporates the two sections of the Housatonic Riverwalk with on-street connections on the west bank of the river. North of the Riverwalk, the loop follows Main Street to George Street, Pearl and Friend Street and then through the Lake Mansfield Conservation Forest off of Christian Hill Road. From the forest, the loop follows Lake Mansfield Road to Castle Hill Avenue, Castle Street through the pedestrian tunnel at the railroad lines, past Main Street to connect back to the Riverwalk. The guide for the walking loop recommends the Lake Mansfield recreation area parking, Town Hall, the St. Peter's Church parking lot, and the Searles/ Bryant Complex as potential parking areas.

The beach and park area is comprised of an 4,200-square foot (0.1-acre) beach with an 7,200-square foot (0.16-acre) roped swim area. (Based on 2011 Google aerial photograph.) The majority of the space is open lawn which is used for sunbathing, children's play, picnicking,



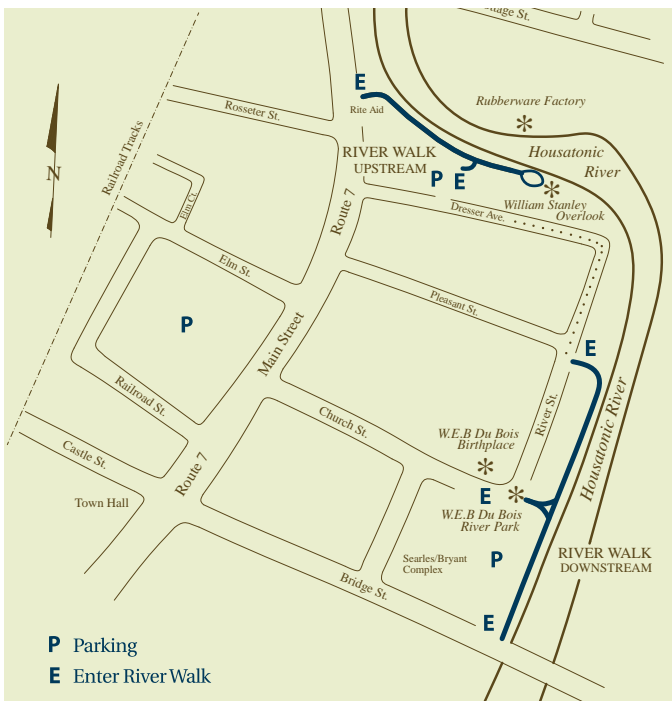
Great Barrington 3.5-mile walking loop; Courtesy of Lake Mansfield Alliance



The park at Lake Mansfield, January 2016



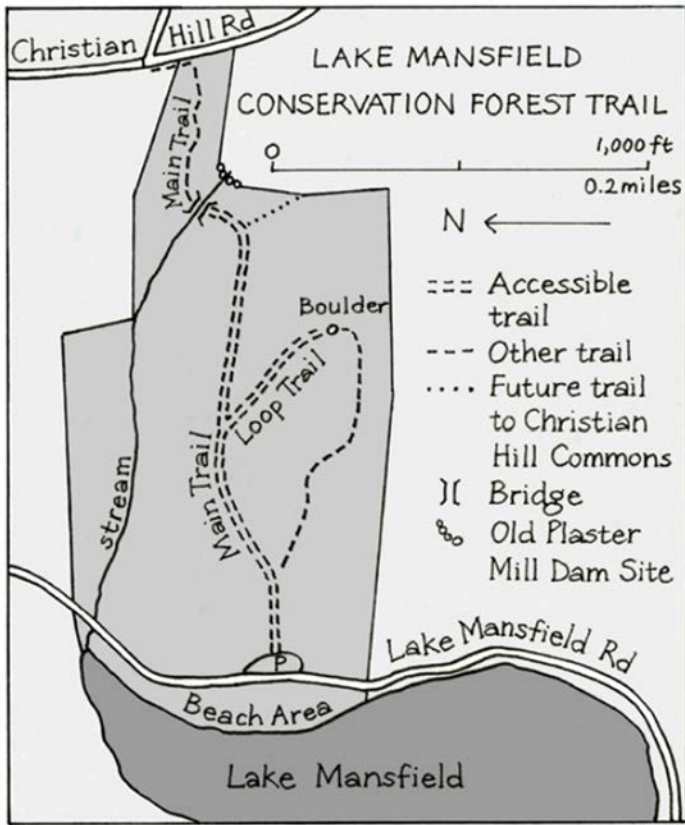
Climbing structure in the park, June 2015



Housatonic River Walk; Courtesy of Great Barrington Land Conservancy



Swings at the park, June 2015



Lake Mansfield Conservation Forest trail map;
Courtesy of Lake Mansfield Alliance

dog play, yoga, and likely Frisbee or ball play when less crowded. Along the edge of Lake Mansfield Road, is a split rail fence, wood post bollards, and a row of apple trees. The split rail fence was installed to help control where people cross the road from the parking area. The apple trees add to the rural character of the park and should be preserved to the extent possible.

Facilities at the park area adjacent to the beach include new fenced areas enclosing changing stalls and portable toilets. Amenities include picnic tables, trash/recycling bins, and charcoal grills, and play equipment including swings—two each of belt and bucket style and a climbing structure. Also, one grid-style bike rack is located. Residents have expressed a desire for better bathroom and changing facilities, trash receptacles, and updated play equipment.

Road rules are noted on either end of the lake on signage provided by DPW. Informational kiosks, constructed by Lake Mansfield Alliance, are located at the boat launch, the beach, and the forest trailhead.



Signage along Lake Mansfield Road, June 2015

Accessibility

Accessibility is significant concern. The land drops more than eleven feet in grade from the existing trailhead to the water level of the lake. The existing raised cross walk helps to slow traffic speeds at the road crossing, but it also creates an impediment to mobility-impaired beach-goers. Despite having an accessible trail through the conservation forest, no accessible parking spaces have been provided. The boat launch also has no accessible parking.

There is a collection of elements at the park area that do not meet accessibility: picnic tables, swings, climbing structure and the changing facilities and toilets. None of these have an accessible path leading to them to make them compliant, and at least one of the picnic tables should be placed on a firm and stable surface as well.

Environment, wildlife and invasive species

Lake Mansfield is a Massachusetts Great Pond which means any work on, in, over or under the waters is automatically subject to permitting under Massachusetts General Law Chapter 91, the Massachusetts Public Waterfront Act. The lake contains trout, pickerel, and bass.

Beavers have been known to dam the lake outlet which floods the roadway. The Lake Mansfield Conservation Forest is listed by the state's Department of Fish and Game as a Wildlife land for passive recreation activities such as public exploration, fishing, bird-watching or boating. Coyotes, white-tailed deer, bear, fox, snapping turtles, barred owls, downy woodpeckers and bald eagles. Hunting is prohibited here.

The conservation forest is comprised of a mixed hardwood forest consisting of cherry, birch, maple and ash. There are also some significant pine trees mixed in. Understory perennial species include ferns, starflower, jack-in-the-pulpit, Solomon's seal and Canada mayflower, as well as spice bush and witchhazel shrubs. Volunteers, led by the Lake Mansfield Alliance often in partnership with local schools, annually work to control garlic mustard, bittersweet, and other invasive plants.

A portion of the project area, the north end near the outlet, has been identified by the state's Natural Heritage and Endangered Species Program as an area for estimated habitats of rare wildlife and priority habitats for rare species. The U.S. Fish and Wildlife lists one threatened species (Northern long-eared bat) and sixteen migratory bird species within the larger project areas including the forest.

A vernal pool has been certified by the state's Natural Heritage and Endangered Species Program on the east side of Lake Mansfield Road. Vernal pools are essential habitat and breeding grounds for a variety of wildlife—especially amphibious species—and must be protected.



Green frog in Lake Mansfield, June 2015



Snapping turtle emerging from the lake, October 2015; Courtesy of Christine Ward, LMITF



Purple loosestrife (an invasive species) along the lake edge



Eurasian Watermilfoil (an aquatic invasive species);
Courtesy of LMITF



Curly leaf pondweed (an aquatic invasive species);
Courtesy of LMITF



Stormwater runoff from recreation area parking, date unknown; Courtesy of LMITF

The lake itself is shallow and has two documented invasive species: *Myriophyllum spicatum* (Eurasian milfoil) and *Potamogeton crispus* (curlyleaf pondweed). Biological controls (aquatic weevils for the milfoil) and bottom barriers at the beach have mitigated the weeds to some extent. The northern portion of the lake has also been treated for *Phragmites australis* (common reed). In 2012, an Aquatic Vegetation Survey was completed by Geosyntec Consultants. The survey documented all aquatic vegetation and noted the two non-native, invasive species listed above. It also noted that the majority of the lake edge was very dense with vegetation, except at the swimming area. The weeds in the swimming area are kept in check by the weed control fabric, a barrier that is set on the bottom each spring and removed in the fall.

Erosion, sedimentation and pollution

The lake road is a serious concern as the vegetated buffer between the road and the lake that once captured non-point source pollution is eroding and, in some locations, has been lost altogether. In 2012, an Aquatic Vegetation Survey was completed by Geosyntec Consultants. The survey documented all aquatic vegetation and noted the two non-native, invasive species listed above. It also noted that the majority of the lake edge was very dense with vegetation, except at the swimming area. The weeds in the swimming area are kept in check by the weed control fabric, a barrier that is set on the bottom each spring and removed in the fall. This narrow strip of land between the road and lake—where it exists—is privately owned by the parcels on the east side of the road. The existing bank is degrading in part due to wind and wave action, poor road drainage compounding the freeze/thaw action.

Pollutants and sediments threaten Lake Mansfield. Non-point source pollution occurs when stormwater carries pollutants such as lawn fertilizers, oil from roads and parking areas, animal waste, as well as sand and gravel from driveways. The contaminated runoff compromises the lake's water quality and increases in nutrients can promote the growth of algae and invasive aquatic plants. The recreation parking area and Knob Hill Road drain directly towards the boat launch. The steep gradient of

Knob Hill Road causes stormwater runoff to flush directly into the lake without first being treatment.

With a 604(b) water quality planning grant, the Town hired Foresight Land Services of Pittsfield, Massachusetts, to prepare a conceptual drainage plan for Knob Hill Road in 2012. The plan can be used as the basis of a future 319 water quality grant application. Their document and drainage improvement plans were reviewed by Woodard & Curran, a KZLA Team member, and they agreed that their plans were appropriate to the site and its stormwater issues. These improvements will help the challenges at the boat launch.

A water quality study is being conducted by the Berkshire Environmental Resource Center (BERC) and some Bard College at Simon's Rock students. The two year study began in early 2015 and was funded by the Massachusetts Environmental Trust (a Massachusetts fund for conservation and water quality improvements made possible by the sale of three specialty license plates—the Northern Right Whale, the Leaping Brook Trout, and the Blackstone Valley Mill). The initial results found that the pH level dropped in the winter to a near neutral 6.0 and raised back to 9.3 in autumn. Total nitrogen, total phosphates and total suspended solids were all higher than desirable. A final report will be prepared in late June 2016.

The existing lake outlet control consists of an undersized twelve-inch pipe that is prone to flooding. During a December 2015 site visit, the pipe was clogged with vegetation and debris from the pond. It appears as if the original stream channel was located approximately twenty feet south of where the current outflow pipe is located. The lake level has risen over the years since the Fire District no longer uses the lake as a water resource. In addition, the outlet culvert at the north end of the lake is the only discharge point.

Emergency Services

Emergencies can and do occur in the Lake Mansfield Recreation Area, and access to and through the area for emergency services must be maintained. For example, in February 2016, an ice fisherman fell through the ice approximately 500 feet from the shore. Good Samaritans helped to try to rescue the fisherman from the waters, but they subsequently fell through the thin ice. Emergency vehicles from the Great Barrington Fire Department and the nearby town of Egremont were staged along Lake Mansfield Road near the boat launch. The ice fisherman was transported to Fairview Hospital by Southern Berkshire Ambulance. Fire trucks arrived on the site from both the north and the south.



Both images: Ice rescue on Lake Mansfield, February 2016, Courtesy of Great Barrington Fire Department

Private Properties

South of the town-owned Lake Mansfield Conservation Forest, eight properties abut Lake Mansfield Road and the lake within the project extents. Just to the south of the town property is the Eastview club—a private pool club which, in 2015, had fifty-three members. Access for the pool, open only in summer, is from Lake Mansfield Road. South of this is the one private residence with a driveway on the project limits of Lake Mansfield Road. The next parcel to the south is undeveloped.

The next three lots to the south are improved with homes but these are accessed from Knob Hill Road and Lake Mansfield Lane. They sit on the ridge, well above the elevation of Lake Mansfield Road. The final house on the east side is located at the corner of Knob Hill Road and Lake Mansfield Road and looks directly towards the boat launch area. The only parcel on the west side of the road sits to the west of Lake Mansfield Road and abuts the boat launch.

Previous Studies for Lake Mansfield

Prior to hiring KZLA, the Town of Great Barrington and the Task Force engaged other professionals to study and/or design portions of the Lake Mansfield recreation area. In 2009, Okerstrom-Lang Landscape Architects LTD, of Great Barrington, prepared an overall concept for the recreation area. Their plan included development of the conservation forest, a new parking area associated with the beach and trails, viewing/fishing stations along Lake Mansfield Road, and a boat launch.

In 2012, a Knob Hill Stormwater Planning Report was prepared by Foresight Land Services of Pittsfield, Massachusetts as part of a 604(b) Water Quality Management Planning Grant. The report is the final phase in the grant program for which the Town received \$10,700 in 2010 for the preparation of the report produced preliminary design plans and cost estimates for managing non-point source pollution of Lake Mansfield from Knob Hill Road. The plans provide a solid basis for the Town to apply for a 319 grant for funds to construct these needed improvements. (The Woodard & Curran, the KZLA team's engineer, reviewed the preliminary designs and supports the proposal.) The report also included a conceptual design of how the Knob Hill Road improvements should link to those at the boat launch.

In addition to these studies, construction projects have been undertaken in recent years. In 2013, the Task Force and the Town worked together to earn funding for stormwater improvements on Castle Hill Avenue at the southern end of the lake. \$266,500 from the Massachusetts DEP's Section 319 Clean Water Act grant was supported at a rate of 40% with Town funds and in-kind services from Lake Mansfield Alliance and Task Force volunteers and town staff. The project installed a new storm drain system on Castle Hill Avenue with deep sump catch basins and a hydrodynamic separator to alleviate non-point source pollution and sedimentation from run-off on Castle Hill Avenue. This work was engineered and documented by Tighe and Bond, Inc. of Westfield, Massachusetts.

Also in 2013, Tighe & Bond prepared a study for Lake Mansfield Road that included three alternatives for road repairs, based on a hydrologic and hydraulic study of the lake and traffic data. A traffic impact study was conducted for each alternative. The three alternatives were:

- Alternative 1 rehabilitates the road in its current layout with two-way traffic, installing a new drainage system and stabilizing the road edge on the lake. This included two ten-foot wide lanes and a full-depth rehabilitation of the bituminous pavement, including sub-grade. It also included a guardrail along the stretch of the road that is in close proximity to the lake. Traffic impacts were considered negligible.
- Alternative 2 converted the road to one-way traffic, also with new drainage and bank stabilization. The option proposed maintaining a twenty-foot road bed but eliminated the guardrail. Because the full depth rehabilitation would still be needed, the cost was not significant less than alternative 1. This alternative also was evaluated to have negligible traffic impacts due to the proximity of parallel Main Street.
- Alternative 3 propose closing the road to traffic and using the road for recreational use with improved drainage and bank stabilization measures. Due to the reduction of loading on the road, full depth rehabilitation was not recommended and therefore the estimated construction cost was significantly less.

The traffic study, completed in June 2013, showed that traffic volume on Lake Mansfield Road is relatively low. Traffic recorders were located north of Knob Hill Road and south of Dehon Road and recorded 575 vehicles and 550 vehicles, respectively. At both locations, north bound traffic accounted for slightly more half of the traffic than southbound (53% each). Heavy trucks were present in small numbers.

Section II: Project Process

Community Engagement & Preliminary Design Studies

The first step in the public process—and the most important task throughout the entire planning process—was listening: reaching as broad an audience and gathering as many opinions as possible. The public process is important to learn not only how the site is being used, but what the community’s vision is and what ideas they have for the site. The design team’s role as planners is to synthesize the existing conditions, the feedback we receive from the community, and apply this information to the defined the project goals.

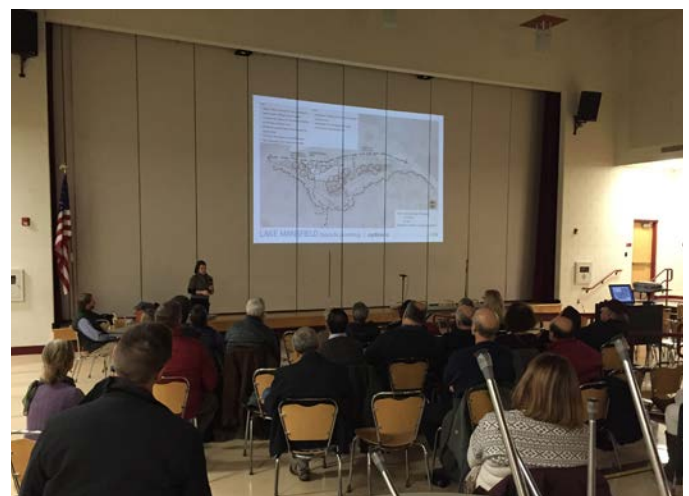
The Town hosted a series of public forums (4 November 2015, 13 January 2016, and 2 March 2016) and followed each with an on-line survey. The surveys were meant to share the same information which was presented at the public meeting so that those who were unable to attend could still be a part of the public process. The surveys also allowed the community an anonymous venue to share their thoughts and desires for the project. All public forums were recorded and later aired on Community Television for the Southern Berkshires (CTSB) and posted on line at www.ctsbtv.org.

In addition to the forums and surveys, members of the Task Force provided articles for the Berkshire Edge, the Berkshire Eagle, and the Berkshire Record and were also interviewed on WSBS radio 960 AM and 94.1 FM on 17 February and 2 March 2016.

Meeting notes for the public forums, a paper version of the survey questionnaires, and the full survey responses are included in Appendix A.

Public Forums & On-line Surveys

The first meeting and survey were geared toward sharing what the design team had learned from meetings with the Task Force and by conducting site walks and reviewing design studies and reports prepared to date. In addition, the meeting was important for the design team to ask questions and gather more information from the community who uses the landscape. KZLA presented slides and discussion about their understanding of the conservation area; its resources, challenges and opportunities; and, previous planning work completed by the Task Force and consultants. This information included Lake Mansfield conservation area in the broader context of regional and local recreational and natural opportunities.

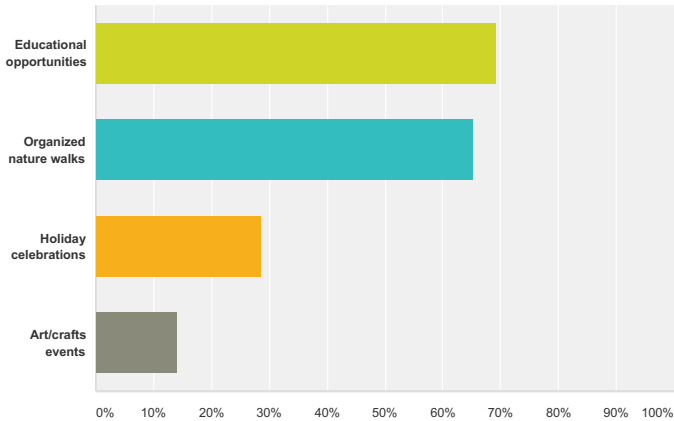


Public forum #2, January 2015

Project objectives were identified as creating: a multi-generational space; a place to celebrate the natural world; a place that reinforces connections throughout the community; a space that embraces scenic, recreational and aesthetic strengths of the landscape; a place that promotes the lake as a resource for healthy living.

Q3 What events would you like to see in the park in the future?

Answered: 49 Skipped: 35



Sample survey question, October 2015; Courtesy of www.surveymonkey.com

Concerns and observations were made by the public regarding speed and safety concerns along Lake Mansfield Road; nefarious activities in the existing parking area; improvements to the boat launch; improved crossings from the parking to the beach area; and, a potential satellite parking area. There were also requests for new and/or improved site amenities including more bike parking, fishing platforms, boardwalks, volleyball court, lap lanes outside of the beach area, and compostable toilets. Environmental concerns were also addressed, including the certified vernal pool, consideration of sustainable pavement options, weeds in the lake, amphibian crossings and the outlet control structure size.

The first on-line survey ran from Tuesday, 27 October, 2015 until Saturday, 27 November. In that time, ninety-five people responded to the survey. Below is a summary of the survey results:

- 83% of respondents are year-round/full-time residents of Great Barrington
- The most attended events include park clean-up days, volunteer efforts and lake celebration days
- Most requested events for the future included educational opportunities & nature walks
- Most participated in activities include walking on road, hiking on trails, picnicking, reading/relaxing/ enjoying the sunset, playground use, boating. (Swimming was unintentionally excluded from survey but well noted on the responses.)
- Requests for improved amenities/activities includes more beach space, nature educational activities, more hiking trails, and more bike racks.
- Inappropriate activities with more than one write in included no motor boats/ATVs/snowmobiles, large, private gatherings and drug use.
- Popular write-in comments for what most needs to change, include: changes in Lake Mansfield Road use, especially for public safety purposes and establishing a pedestrian/bike lane (over 40 total responses). Other improvements included recommendations for ecological concerns; access to the site and its resources; parking; park amenities; and, nothing at all.
- Popular write-ins for what should not change included the small town, quaint character of the space; the fact that it is open to everyone; the natural scenery/habitat; and, that the parking size and beach size should not be increased.
- Safety along the road and the roadway condition, and water quality of the lake were identified as the most critical issues to be dealt with.
- There was a wide variety of responses from the community in what they hoped the park to become in 5-10 years. A few of the most popular include: establishing one-way road with delineated bike/ pedestrian lane; a peaceful place of natural refuge and scenic resources; and, minimal alterations/ development.

The second public forum was used to gauge the public's reaction to preliminary design studies. KZLA prepared several options for Lake Mansfield Road, the parking area and the boat launch. All of the design studies for the three focus areas were weighed against six criteria identified by the Task Force. Three major criteria reinforce the project goals and help to clarify how each design alternative meets those goals. These include: the design solutions impact on water quality, lake health and habitat; the impact on safety for all users; and, the impact on access to and through the landscapes, for both pedestrians and vehicles. Also evaluated for each study was project construction costs; potential funding support/grant opportunities; and, permitting requirements.

Three focus areas were concentrated on which have significant impact on how the entire space is developed:

1. Lake Mansfield Road
2. The recreation area parking (situated between the beach and trailhead)
3. The boat launch on the southern end of the site.

The alternatives presented a full range of ideas for community input.

At all of the public forums, support for Lake Mansfield Road traffic patterns was divided between maintaining two-way traffic, converting the roadway to one-way, and closing the road and converting it to a recreation corridor. Attendees at all of the forums suggested additional traffic measures should include reducing vehicle speed limits, eliminating commercial vehicles, eliminating through traffic, adding additional traffic calming measures, and seasonal traffic changes for the road. It was also repeatedly noted that there is a need for better enforcement of speeding vehicles and on-road parking on busy summer days.

Early discussions with the Task force on the design for the recreation area parking garnered the following feedback:

- Consider portions of the proposed parking to be overflow (turf) in place of hardscape
- Consider the circulation and connection of pedestrians throughout
- Consider the apple trees on the beach side of the road
- Parking can move further into the wooded area (the loop trail was designed set back from the existing parking so that this could occur)
- Consider winter maintenance and where snow storage would be located
- Having beach parking not having to cross the road is great
- Through traffic best not to drive through the parking lot (though it does provide inherent traffic calming)
- Consider emergency access to the beach area
- Consider view corridors into/from parking areas
- Consider showing the existing trails on the plans for public

Capacity of the recreation area parking was a concern. On this topic public opinion was also divided. Feedback included increasing the parking capacity, as well as opposition to enlarging the parking area so as not to lose more of the conservation forest and even keeping the existing lot as is. There were concerns about limiting capacity of parking since it may mean some are turned away. There were also concerns about lighting and late night activities and how proposed changes will affect how people use the space after dark.

Discussion between the Chris Rembold, Town Planner, and the Massachusetts Department of Fish & Game and their Office of Fishing & Boating Access revealed that Fish & Game is willing to design, permit and construct the boat launch area based on the design proposed by this project; it will however require six to eight parking spaces. The four options prepared by KZLA offered three to seven spaces in various arrangements, all assuming car top access and no trailers. It was suggested that a kayak rack could be included in the area, and it was noted that having space between the parking and the launch/lake edge was useful. Also, a crosswalk should be shown from the sidewalk on the east side of Hollenbeck Road. In conversations with the Task Force, it was noted that the alternatives which protected or enhanced a view of the lake when approaching from Hollenbeck Road (south) rather than a view of parked vehicles would be significant.

Construction costs, permitting and the potential for vandalism was a concern for any boardwalk, dock or fishing structure proposed. As of 2016, structures have not been permitted on Lake Mansfield.

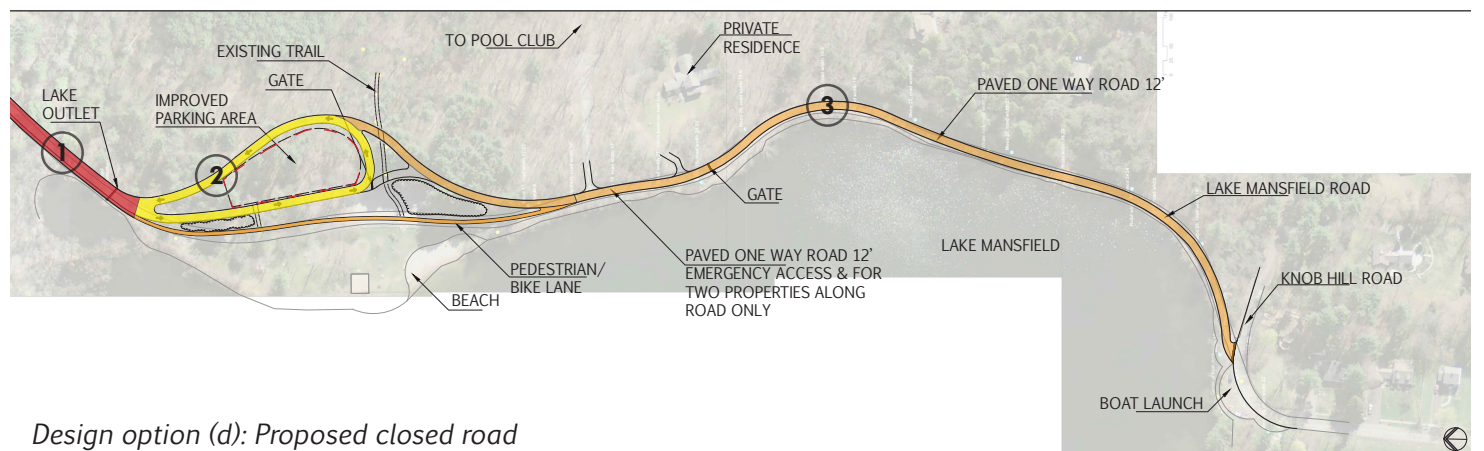
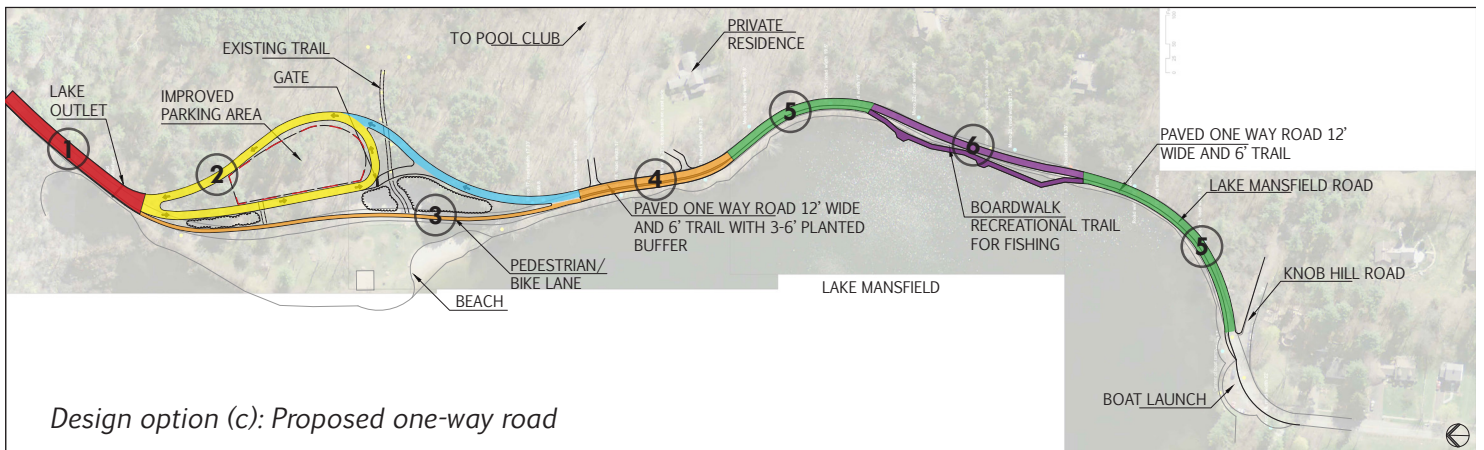
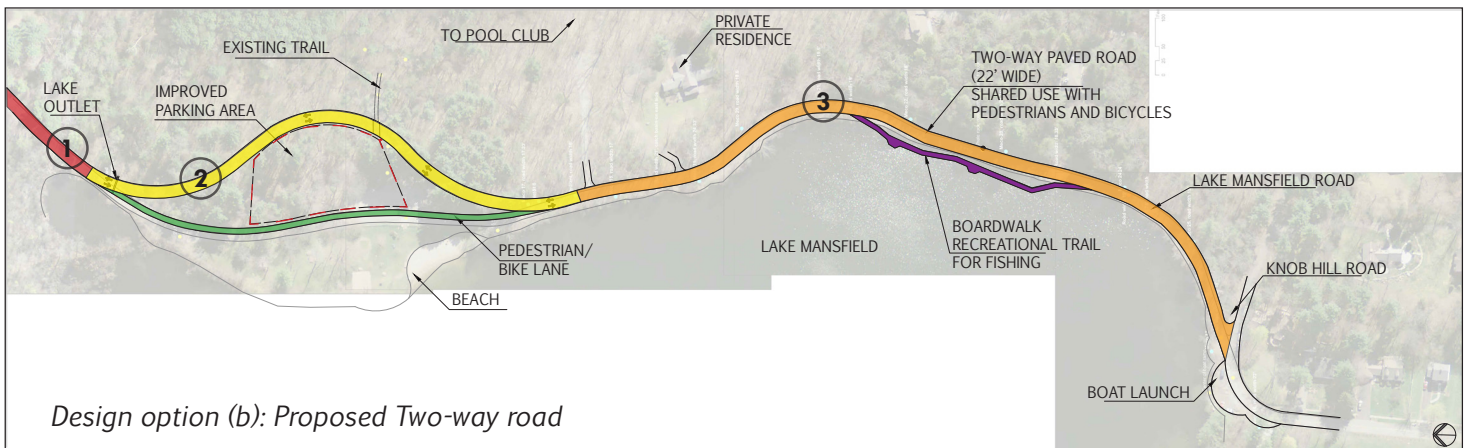
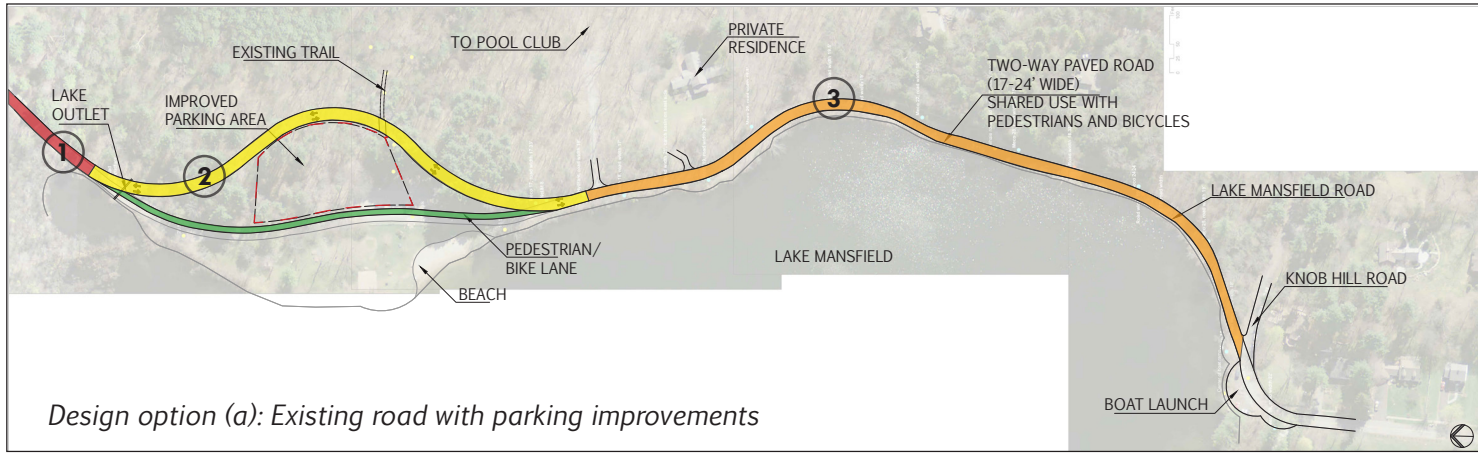
The second survey was focused on the design alternatives presented in the public forum, asked for respondents to select their preferred option, and provide a reason for why the option was selected. (This survey was posted online, but was also available in hard copy at Great Barrington libraries, town hall, and the senior center. The survey was translated into Spanish, as well, but no responses were collected.) The survey ran from 14 January 2016 until 22 February and received 220 responses, though not all respondents answered all questions.

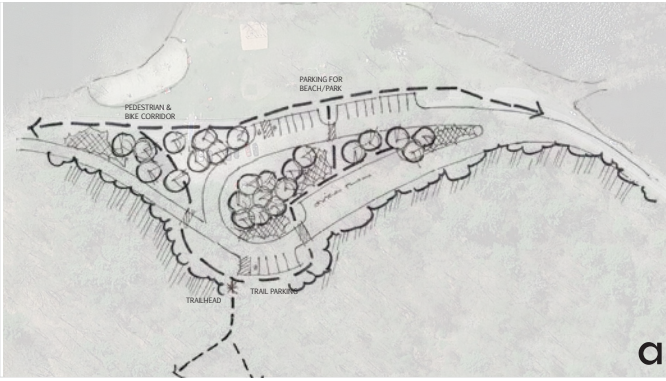
Four options were presented for Lake Mansfield Road: (a) realigning the road around parking improvements, (b) a widened two-way road to meet typical road design standards, (c) one-way road with trail, and (d) closed road converted to recreation corridor. Pros and cons were discussed for each option. (Thumbnails are included here. A full size sketch and the pros/cons are included in appendix E.)

Results were inconclusive and split between the four options. Many respondents stated that they would either leave it as is or widen it as a two-way, while others support both a one-way road and closing the road for a recreation corridor. In an open-ended question, respondents were asked why they had selected the option they did. The five most popular responses to all options included (ranked in order of most common to least): safety; ecological benefits/lake and resource habitat; needs of the community; cost savings/efficiency; and, the desire for less/slower traffic.

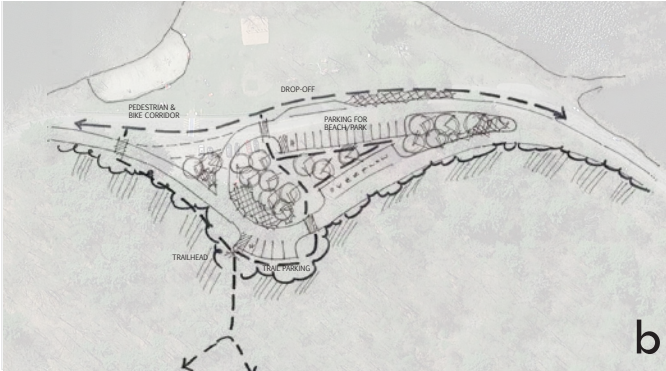
Survey results were as follows:

- | | |
|--|-------|
| a. Leave it as it is | 19.8% |
| b. Maintain as a two-way road, but widened | 18.4% |
| c. Narrow to a one-way road | 33.5% |
| d. Close the road | 28.3% |

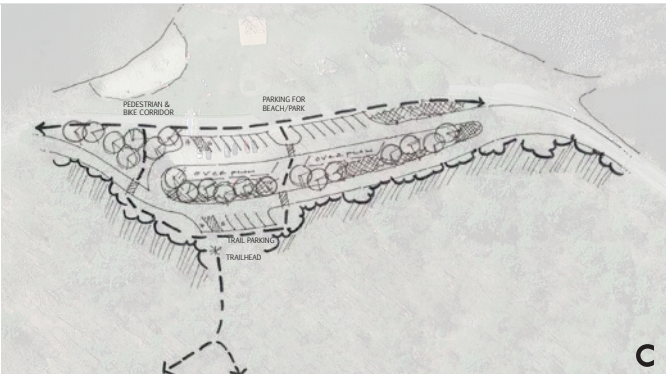




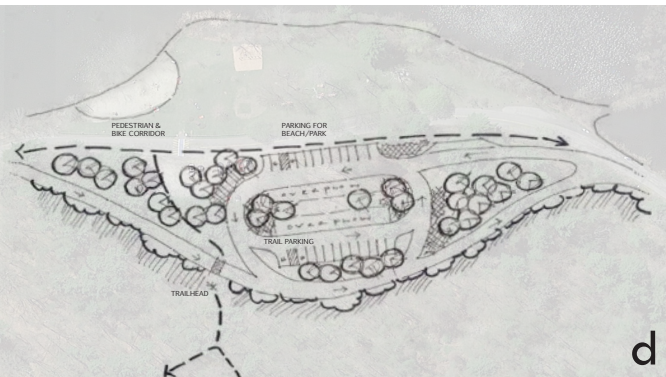
Recreation area parking design option (a)



Recreation area parking design option (b)



Recreation area parking design option (c)



Recreation area parking design option (d)

Four options were also presented for the recreation area parking. All of the parking options have approximately the same number of permanent parking spaces (approximately 20) with some designated as year-round and some as seasonal overflow spaces (not included in the permanent spaces). Proposed and existing trails and paved pedestrian walkways were shown on the concept plans. The proposed concept plans included: (a) perpendicular parking around a teardrop-shaped access drive with some parking spaces on the beach/park side, (b) perpendicular parking around a teardrop-shaped access drive with a passenger drop-off on the beach/park side, (c) angled parking with one-way access around a long, thin access drive, and (d) a more traditional parking layout where Lake Mansfield Road by-passes the parking lot. Pros and cons were discussed for each option. (Thumbnails are included here. A full size sketch is included in appendix D.)

Again, the survey results did not provide one clear favorite. In the open-ended question, respondents were asked why they had selected the option they did. The five most popular responses to all options included (ranked in order of most common to least): direct pedestrian access from parking to beach/park without requiring a road crossing road; minimal impact on forest & trail system; parking is not directly adjacent to the beach; and, the option allowed for an expanded passive recreation space.

Survey results were as follows:

- a. Perpendicular parking with spaces on beach side 19.1%
- b. Perpendicular parking with drop-off on beach side 24.2%
- c. Angled parking with one-way access (narrow) 25.5%
- d. Traditional parking with road by-pass 31.2%

Four options were studied for the boat launch area near the intersection of Lake Mansfield Road and Knob Hill Road. Each have their own positive and negative aspects which were included in the survey discussion. It was also noted that there is a possibility that the Massachusetts Department of Fish & Game's Office of Fishing & Boating Access may provide design and construction services for improvements to the boat launch. To meet their standards for boat access, they require between six to eight parking spaces for the launch and recommend a spigot for boat washing in order to reduce the spread of invasives. (Thumbnails are included here. A full size sketch is included in appendix D.)

The four options included: (a) seven parking spaces (including one accessible) perpendicular to Lake Mansfield Road with a dock, (b) six parking spaces (including one accessible) perpendicular to Lake Mansfield offset from the road by five feet to allow pedestrians to walk behind vehicles and a walkway to the lake edge, (c) three pull-off spaces (including one accessible) confined to the existing disturbed area with a wider access to the lake edge, and (d) six off-street spaces (including one accessible) following the property line woods with pedestrian walkways. Positive and negative aspects of each design were discussed on the survey.

Overall response to the open-ended question of what they chose the option, respondents included the following priorities for all options (ranked in order of most common to least): option created a dock; the option felt safer with car not required to back into road; the option provided spaces required for state funding; elimination trailers; and, conversely, the option allowed the trailer launch to remain.

Survey results were as follows:

- a. Pull-off with dock 28.2%
- b. Split pull-off 18.6%
- c. Three off-street spaces 26.3%
- d. Six off-street spaces along woods 26.9%



Boat launch design option (a)



Boat launch design option (b)



Boat launch design option (c)



Boat launch design option (d)

Finally, the survey included three images of the beach at Lake Mansfield with varied levels of crowds to determine if the beach should be extended (as suggested from some of the public in the first survey) and to determine if more parking is required. While the intent of the question was misunderstood by some of the survey respondents, it appears as though most people felt that the beach is appropriately sized and the busiest conditions where the beach is extremely crowded only happens on sunny weekend days in July and August. The overall response for all of the options (ranked in order of most common to least) included: a balanced and appropriate ratio of people to space; the lake is a community resource, not a private beach; it is a wonderful place for families/crowded is fun; and, the moderately crowded image is the most accurate/realistic to regular conditions at the beach.

Survey results were as follows:

- | | |
|-------------|-------|
| a. Moderate | 59.9% |
| b. Empty | 09.9% |
| c. Crowded | 30.2% |

The final public forum was held on 2nd of March 2016. The consultant team presented design alternatives for Lake Mansfield Road, as well as parking at the beach and boat launch. The alternatives presented a full range of ideas for community input. New alternatives were produced since the last public forum and since the survey based on feedback. Each of the alternatives were weighed against the six criteria mentioned above and summarized in a matrix by design study.

Six options were discussed: (1) maintaining existing conditions; (2) maintaining the existing road with parking improvements; (3) realigning the road around the improved parking; (4) widening the road to a consistent width with improved parking; (5) reducing the road to one-way (south to north) with pedestrian corridor and improved parking; and, (6) closing the road to vehicular traffic, but improving parking. For the recreation area parking and the boat launch five options were presented for each with one that was developed after the feedback from the second on-line survey.

Public input was geared more towards the alternatives for Lake Mansfield Road. Again, there were residents who supported each of the alternatives presented. Beyond the debate of the potential traffic changes, the following comments were made:

- Need to consider turnaround at boat lunch area if the road is closed. The adjacent roads cannot support additional traffic.
- Signage, policing and outreach will be necessary for any changes in traffic flow
- Biggest issue with the road is the speed; people need to share the road for all users
- Road widening will likely impact both the lake edge and the forested edge and ledge; consider certified vernal pool north of whale rock
- Need to have vehicle restrictions: vehicle types, weight limits of road, etc.
- Roadways traffic is somewhat seasonal
- The Town would still plow the road even if it was closed for emergency vehicle use
- There used to be areas to fish along Lake Mansfield Road without being in the road, but that land has been lost; also bank edge was fish habitat, now that is lost too

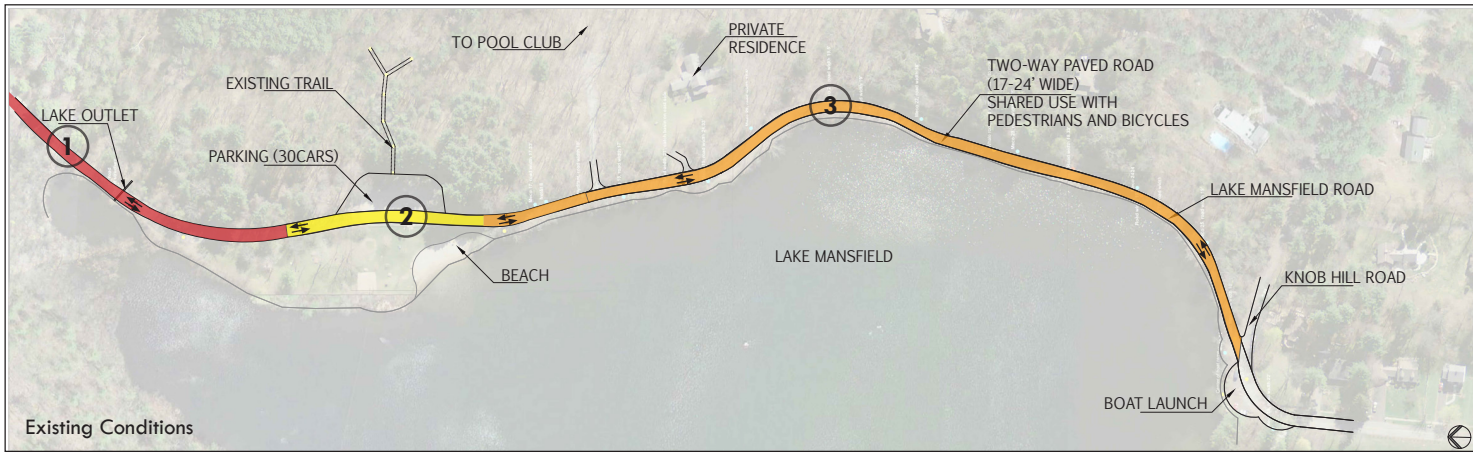
- Consider the cross-pitch of the road; it strongly pitches toward the road
- Consider a road through the woods to parallel Lake Mansfield Road
- History of the road has changed over time: it used to be a dirt path that was seasonal (closed in mud season) and had a strong buffer zone on the lake
- This is an opportunity to impact the future
- This ultimately a question between whether the area is considered a recreation opportunity with natural resources or a transportation corridor
- There will never be enough parking, so please don't design for peak
- Consider lowering the parking area to eliminate access and sedimentation issues
- With closed road, boat launch will be used as parking for beach
- A dock for fishing may not be compatible at the launch as that is where dogs swim and cross-lake swimmers enter the lake plus boaters. Fishing should be elsewhere
- Consider lowering the lake level to alleviate some of the flooding issues

For the final public forum, the design team developed graphic boards that were displayed both at the meeting and later in Town Hall. The boards included the options presented for Lake Mansfield Road, the recreation parking and the boat launch. In an effort to make the various alternatives as clear as possible, the boards and presentation included a matrix comparing the alternatives on the six criteria used to evaluate the options, including impacts on resources and circulation, construction cost estimates, permitting requirements and funding potential. The matrices are included with the design studies in Appendix D.

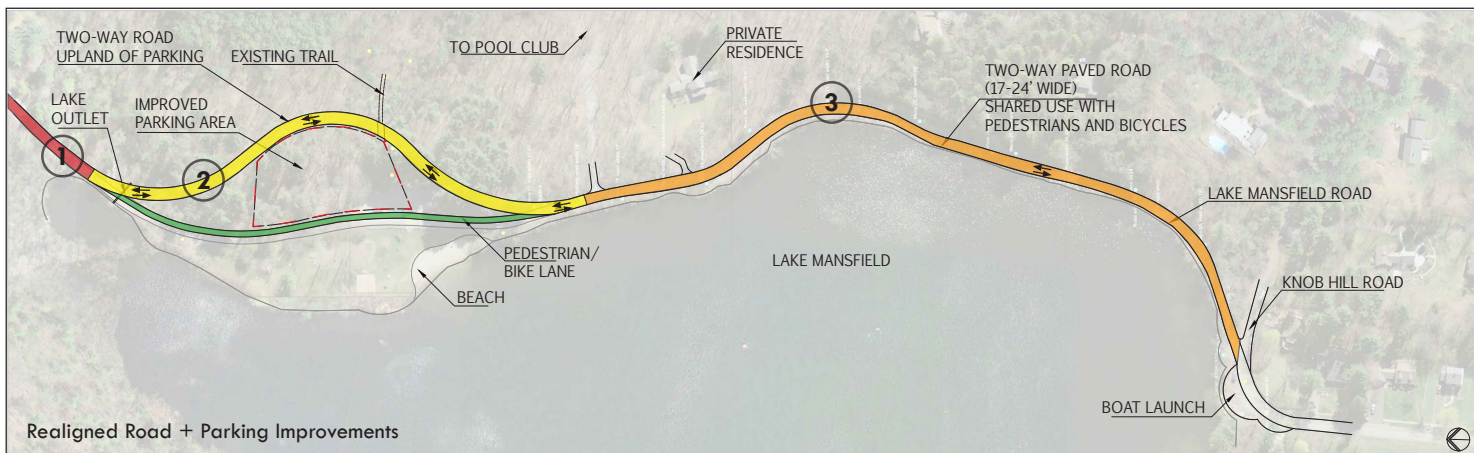
Following the last public forum in March, the design team prepared a final on-line survey to get additional community feedback, especially pertaining to the public's priorities and vision of the Lake Mansfield recreation area. While it was determined that a direction had been identified for the recreation area parking and the boat launch, the feedback for Lake Mansfield Road options was still not clear.

The Task Force ultimately determined that some of the Lake Mansfield Road alternatives were not feasible based on the evaluating criteria. The final survey included question about the area of Great Barrington where respondents lived, or if they lived out of town; how the recreation area is used; how the public prioritizes the project goals; preference of Lake Mansfield Road options; and, level of concern over project funding.

The third survey ran from Thursday, 17 March 17 2016 until Sunday, 24 April 24. In that time it received 334 responses, several of which were turned in as a hard copy either at Town Hall or the Public Library. This survey sampled whether respondents lived in or outside of Great Barrington and asked for streets so the Task Force could be confident that respondents were from throughout the Town. (Please see Appendix A for the survey results including a list of towns outside of Great Barrington and streets for in-town residents.)



Revised Lake Mansfield Road design options: Existing road layout



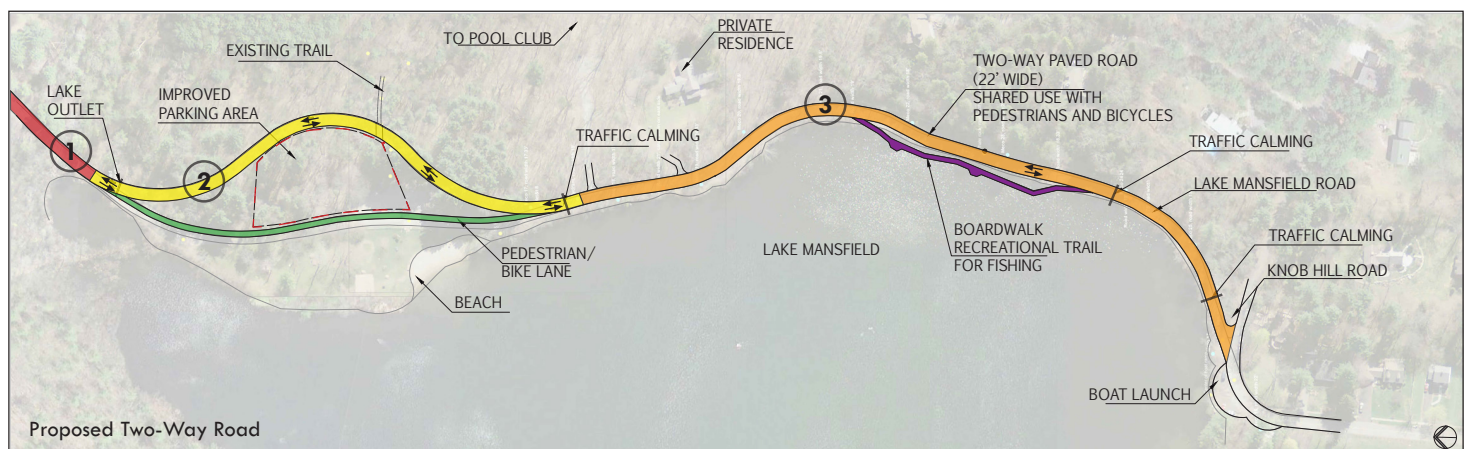
Revised Lake Mansfield Road design options: Realigned road with parking improvements



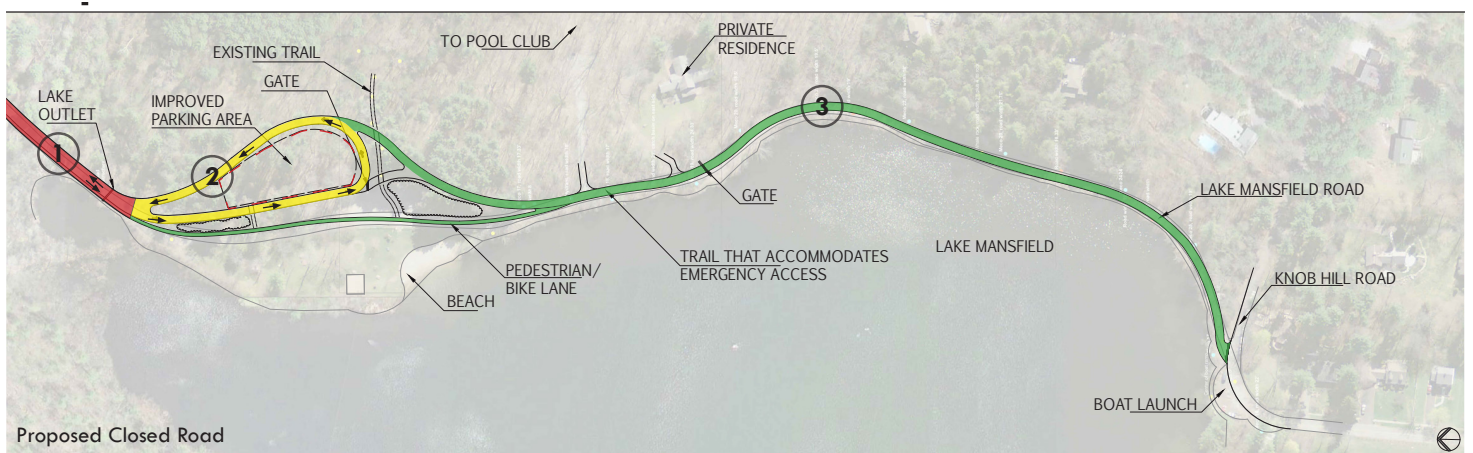
Revised Lake Mansfield Road design options: Proposed one-way road with parking improvements



Revised Lake Mansfield Road design options: Existing road layout with parking improvements



Revised Lake Mansfield Road design options: Widened two-way road with parking improvements



Revised Lake Mansfield Road design options: Closed road/recreation corridor with parking improvements

The first question asked respondents to prioritize the five goals previously established for Lake Mansfield recreation area by ranking them with one as the most important and five as the least important. Survey results were as follows:

1. *Improve and enhance water quality for humans and wildlife
 1. *Improve lake health and restore shoreline habitat for plants and animals
 2. Ensure the safety for recreational users (cyclists, walkers, people fishing, animals, etc.)
 3. Improve pedestrian access and accessibility
 4. Maintain two-way vehicular access
- (*Tied for most preferred priority, though both were most often selected as #2 ranking.)

Next, the survey asked the question regarding the traffic flow of Lake Mansfield Road. The options for the road had been refined based on design guidelines and recommendations. The question read as follows:

Described below are the three most viable long-term options considered for the Lake Mansfield Recreation Area. Please review these options fully before answering the question that follows.

Please note: Extensive research has gone into developing these alternatives, all of which balance a number of town goals for Lake Mansfield. Additional options were considered:

- Fully rebuilding and widening the road to meet state standards is not considered a feasible option considering the extensive wetland and other environmental constraints and the need to restore the shoreline.
- Patching or re-milling the existing road is considered a temporary fix at best, that will only last approximately three to five years. Full reconstruction of the existing road (including base material) would likely required before 2020.
- A boardwalk has been considered as part of various options to provide a separate pedestrian path and fishing opportunities. Because of the additional cost/permitting and in order not to confuse the options, this component has been left out at this time, although it could be added to options A (narrowed, two-way road) and B (one-way road).

Based on the information provided above, which of the viable options do you most prefer?

- | | |
|--|--------|
| A. Narrowed, Two-Way Road (Multi-use for pedestrians, bikes, and vehicles) | 45.67% |
| B. One-Way Road (Boat Launch to Beach) & Shoreline Recreation Trail | 23.18% |
| C. Closed Road/Shoreline Recreation Trail | 31.14% |

Similar to the earlier surveys, when provided the opportunity to write in comments, many people said that the chose either Option B or C but could have selected either one, and some that selected Option A as their preferred, wrote in to say that they felt that the road should remain as is, which was not an option in the survey.

The next question asked how important construction cost should be taken under consideration (taking into account that the Town will be submitting proposals for grants to help fund any of the work to be undertaken). Survey results were as follows:

- I am concerned about costs, but I want to see natural resources/ recreation opportunities improved at Lake Mansfield 58.66%
- Regardless of cost, improvements must be undertaken to enhance lake health, roadway safety, and recreational opportunities. 25.80%
- Minimizing cost should be the primary deciding factor at Lake Mansfield 15.55%

Emergency Services

In December 2015, the planning team met with Great Barrington Emergency Services. Southern Berkshire Volunteer Ambulance Squad Operations Director Bill Hathaway, Great Barrington Police Chief Bill Walsh, and Great Barrington Fire Chief Charlie Burger, and members of the Task Force attended this meeting. None of the representatives foresaw an issue with any of the potential changes to the traffic flow including a possible one way road. They did advocate that if the road were to be closed to traffic, emergency access should be maintained. Bill Hathaway stated that it is more important to have a quick response to a call location, so responders can reach the scene quickly, and administer care. The route back to the hospital does not necessarily need to be as quick as the route to the scene since care is being administered there and on the way to hospital, if required.

Private Properties

There are two private properties located on Lake Mansfield Road between the recreation area parking and the boat launch: one is a private residence that serves as a second home and the other is Eastview Pool. The Town sent letters to the pool members and to the one residence with a driveway at the lake (30 Lake Mansfield Road) inviting these people to participate in this planning process.

On 10th of April, the Task Force received a letter from one of the owners of an unimproved parcel along Lake Mansfield Road. He expressed his support for the planning effort but was concerned that any parallel parking along that might be proposed along Lake Mansfield Road could impact private property.

Lake Health

As part of the planning process, the design team evaluated other components of the project. New England Environmental, Inc. reviewed the lake health and provided recommendations for controlling aquatic vegetation and aquatic weed management. Woodward & Curran assisted in the evaluation of stormwater treatment, options for replacing the lake's outlet control structure to alleviate the flooding, and in identifying potential funding opportunities and permitting requirements for the proposed alternatives. These components will be discussed in greater detail in the next section of the report.

Task Force Input

Just prior to the end of the final public survey, the planning team met with the Task Force to review the options proposed to date (on 25 April 2016). The group met on site to evaluate the proposed layouts for the boat launch on the south side of the lake, and the recreation area parking, which the design team had laid out and flagged prior to the meeting.

The group also walked the length of Lake Mansfield Road noting the varying widths of sections of the road and the variety of existing challenges to roadway alignment (i.e. outcroppings, lack of vegetated lake bank, swales and vernal pools). The variety of roadway width options were reviewed, including two-way and one-way and separate recreation lanes/trails. While there, the group observed the existing complex traffic patterns, including two-way vehicular traffic with cyclists, pedestrians, and fisherfolk.

The Task Force met on 9 May to discuss the proposed improvements as a group. They discussed the key site components (Lake Mansfield outlet area, Knob Hill and boat launch, recreation area parking and Lake Mansfield Road) and were asked to respond to the following questions:

1. Outflow Improvements. Needed as a separate improvement from parking lot and road improvements. Potential support funding available. Do you understand the proposed improvements for this area? Do you have any concerns or other comments?
2. Knob Hill Stormwater Treatment. These improvements are in line for DEP funding as soon as the matching funds (40%) are established within the budget. A preliminary concept has been developed. Do you have any concerns or other comments?
3. Boat Launch. Improvements to storm water management, parking and access. Support through MA Boating and Access possible. Do you understand the proposed improvements for this area? Do you have any concerns or other comments?
4. Parking Lot Improvements. Our site visit helped us to see the parameters of the current design proposal which involves reconfiguring the road to be behind the parking and moving the parking back from the lake to a more level area to allow for water quality improvement, improved parking, improved safety and access. Do you have any concerns or other comments?
5. Lake Mansfield Road Improvements (from beach parking area to boat launch). At our site visit we explored the impact and space required for a narrow two-way park road, a one-way park road with adjacent pedestrian way, and a one-way shared road. What is your preferred option? Do you have any concerns or other comments?

Feedback from the Task Force took into consideration the public input from the entire process. Each Task Force member also represented the Town Commission, Department or Agency which they represent.

Design Guidelines

Based on the feedback received from the Task Force members, the following design guidelines were applied to the final comprehensive plan:

Lake Mansfield Road Improvements

- Re-establishment of a healthy lakeside buffer zone should be a priority
- One-way road is preferred to allocate space to restore lake edge and buffer and to provide a recreation path
- Vehicular lane should be as narrow as possible to slow traffic (twelve feet wide)
- Provide road-adjacent pedestrian way, separated by type of road surface, line painting, and/or possibly height of surface
- Consider traffic calming measures along road
- Consider limited parking along road to accommodate visitors from south
- Allow for the implementation of stormwater collection and treatment along road edge
- Bicycle traffic should be with the cars as it is on other roadways (not in pedestrian pathway)
- Consider seasonal road closures

Outflow Improvements

- New outlet structure is necessary to alleviate flooding
- Structure should be visually unobtrusive and blend into the environment as much as possible
- Structure should not hinder the movement of wildlife
- Outlet may be relocated (consider former stream channel location)
- Consider water level and potential impacts
- Consider new stream crossing standards
- Outlet replacement should come early in phasing sequence of project implementation

Knob Hill Stormwater Treatment

- Knob Hill stormwater treatment is necessary to alleviate flooding conditions in Lake Mansfield Road and siltation and sedimentation of the lake
- Previous study and recommendations (2012 by Foresight) remain applicable
- Should be early in phasing sequence of project implementation (Must be completed prior to, or in conjunction with, improvements to the boat launch area and Lake Mansfield Road.)

Boat Launch

- Proposed plan should enhance the health of the lake through stormwater mitigation and provide for safer, more organized parking
- Parking should be located out of the viewshed of the lake to the extent possible
- Provide enough parking to qualify for development by Massachusetts Department of Fish & Game's Office of Fishing & Boating Access
- A dock is unnecessary for existing /proposed uses
- Development of parking should allow for re-vegetation of lake edge and bank stabilization
- The southern edge of the lake should give a positive first impression of the space as a recreation area
- Provide screening along property line of adjacent neighbor
- Consider permeable pavement treatment (may not be possible due to water table)

Parking Lot Improvements

- Redeveloped parking areas should accommodate a total of fifty parking spaces including twenty permanent, paved spaces and thirty seasonal/overflow spaces that can be an alternative materials, ideally permeable
- Consider relocation of the parking lot and rerouting of the road to the east of the parking area to reduce erosion and sedimentation to the lake.
- Consider the viewshed of the lake and beach/park area as visitors arrive from the north on Lake Mansfield Road.
- Consider relocating the road to the east of the parking to allow for a safer condition for visitors accessing the lake and park
- Consider shifting the parking area to the north and reclaiming the existing space adjacent to the beach and park to provide more open green space to be available for recreation and lakeside habitat
- Exclude parking from the existing roadway section to maintain views of lake; a passenger drop-off/unloading area would be acceptable in this area
- Consider including greenspace within the parking area to help control of run-off as well as supporting the feel of this as a recreation area
- Consider the curvilinear nature of the proposed roadway and its impact on vehicular traffic
- Provide parking for both the lake and park as well as the trailhead
- Preserve significant trees in the forest
- Limit impact to existing trail system
- Maintain split rail fence and apple trees
- Ensure that off-season and trail parking is not too isolated
- Consider lighting as a security feature in parking area and allow for views into parking area from road and park

Section III: Final Comprehensive Plan

Design Recommendations

Lake Mansfield Road

Based on the project goals, the various design studies (including those prepared prior to this master planning project), public input, design and permitting constraints, potential costs and grant opportunities, and the consensus of the Lake Mansfield Improvements Task Force, the recommendation for Lake Mansfield Road is to convert it from two-way to one-way from the intersection of Knob Hill Road to the beach area parking, with traffic heading south to north. The road from Christian Hill Road to the beach area parking would remain two-way. In order to provide a separate pedestrian corridor for the length of the one-way road, to stabilize the bank of Lake Mansfield, and reduce sedimentation of the lake, the driving lane of the road is recommended to be twelve feet wide. No additional traffic calming measures are recommended considering the narrow width of the road and the curves along its alignment. It is intended that cyclists use the road and follow vehicular traffic rules. ***This recommendation achieves the maximum benefit for the health of the lake habitat, the water quality of the lake, the safety of all users of the recreation area, while balancing the need for continued access to and through the recreation area, and maximizing the potential for grant funding.***

The road has been realigned within the thirty-foot right-of-way. Where the road is currently located outside of the right-of-way, the alignment has been shifted so that it is located wholly within the allotted thirty feet. Also, in areas where little or no vegetated bank currently exists between the lake and the road (mostly on the south end of the lake), the roadbed has been shifted east to allow creation of as much bank as possible. Restoration of the lake edge is an essential component to the plan and necessary for the health of the lake and the stability of the road. Because wind and wave action eroded the bank to the point of non-existence, an engineered solution will be necessary to create a long-term solution. More detail on the bank stabilization and restoration of the lake edge is included in the section on Lake Mansfield, below.

It is recommended that the roadway be paved with a typical bituminous pavement system. (Towards the end of this section of the report, various pavement systems are described and their positive and negative attributes are discussed.) A permeable pavement system was considered for the road, but due to the proximity to the lake, it is crucial that stormwater be treated before entering the groundwater. Other, less traditional systems were also considered, but as the road will still be used by emergency vehicles, the pavement needs to be able to withstand heavy loading. Also, the entire pavement section needs to be reconstructed with a

Lake Mansfield Road Key Design Features

- One-way road with 12-foot wide paved drive lane heading south to north
- 5 to 6-foot wide pedestrian path running parallel to road in (stabilized) stone dust
- Some areas of buffer between road and pedestrian path
- Creation of vegetated buffer and new lake edge (wetland bank) on southern end of lake
- Realignment of road within right-of-way to allow for bank restoration
- Full-depth reconstruction of road bed
- Parallel parking spaces near popular fishing area
- Vegetated swales along road for stormwater collection and treatment
- Relocation of two utility poles

suitable subbase and base that can support the traffic and the environmental conditions. Because of the investment this will require, the pavement system should be durable and cost efficient.

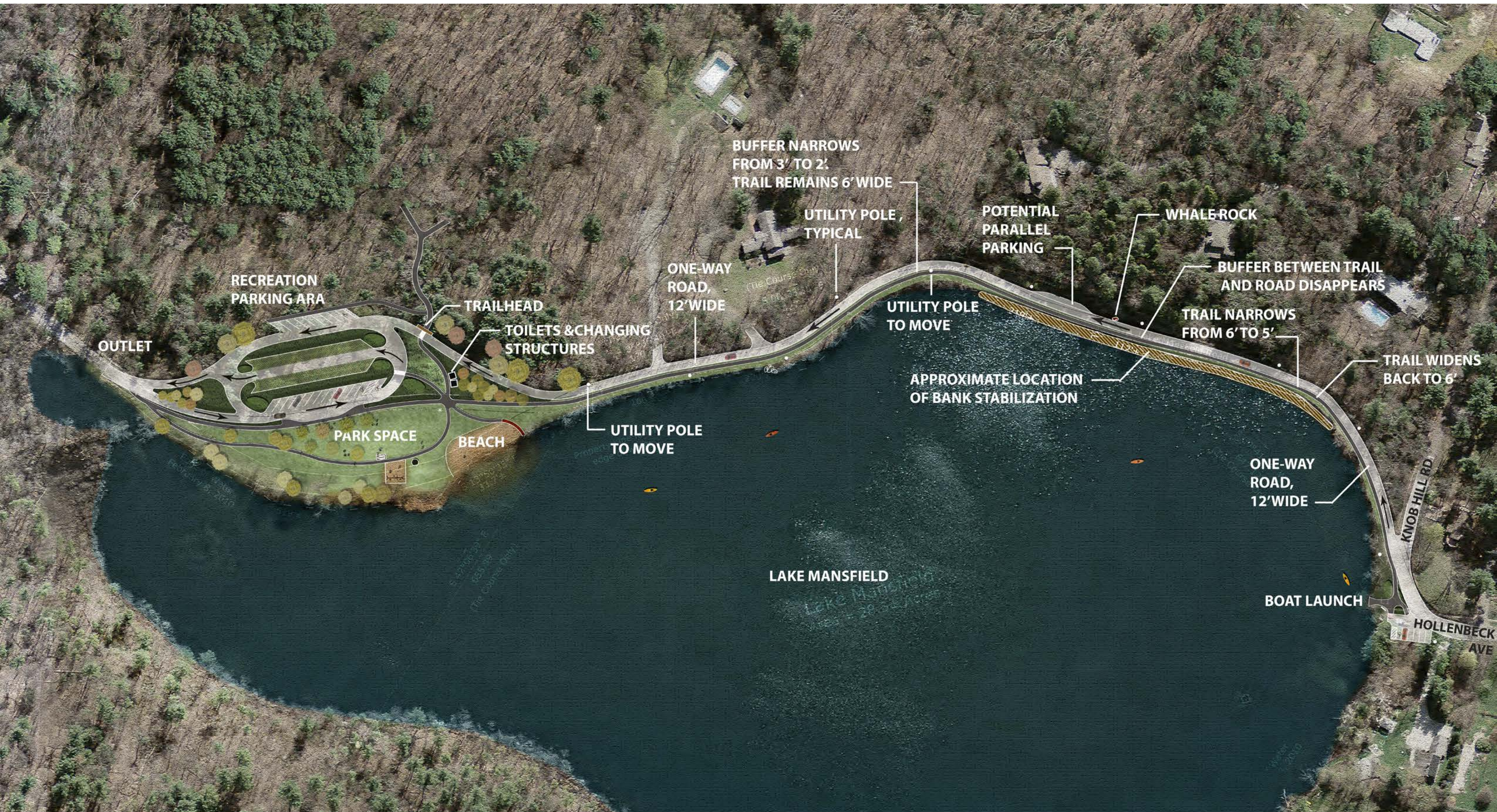
The roadway design must include careful designs for stormwater management. Areas for stormwater collection and treatment should be included along the eastern edge of the roadway. Vegetated swales will provide short-term stormwater retention and treatment. Additional information on stormwater management is included in the Drainage and Stormwater Control section below.

Two utility poles would need to be relocated so that they are not within the roadbed. This will need to be coordinated with the utility companies. We also recommend the Town explore placing the utility wires underground for the length of the road in the project area. (Relocating the utility lines underground is not included in the construction cost estimate.)

Some participants in the planning process expressed a desire for one or two parallel parking spaces along Lake Mansfield Road so that visitors coming to fish from the shore might have a place to park, instead of needing to walk all the way from the beach parking lot or boat launch. It may be possible to locate this parking near Whale Rock, but at least one private property owner has expressed concern with having parking located adjacent to their property.

Running parallel to the road is a five- to six-foot wide pedestrian recreation path on the lakeside of the road. For most of the length of the road, the pedestrian corridor is separated by a three-foot wide vegetated buffer. At some of the sharper curves in the road, the buffer is reduced to two feet and where the space is very constrained, the buffer is eliminated entirely. While the make-up of the buffer can be varied, in some locations, the buffer should be comprised of wildflowers or grasses. This will allow an easy transition and provides snow storage space for winter snowplowing. The path is recommended to be constructed of stone dust or stabilized stone dust. Stone dust or crusher fines as a pavement system requires less maintenance than other permeable systems that meet accessibility requirements.

The following pages include a rendered version of the comprehensive plan, and two sections showing the one-way road with pedestrian path, with and without a buffer strip.



LAKE MANSFIELD: COMPREHENSIVE PLAN
GREAT BARRINGTON, MA



LAKE MANSFIELD: LAKE MANSFIELD ROAD - NO BUFFER
GREAT BARRINGTON, MA



LAKE MANSFIELD: LAKE MANSFIELD ROAD - SECTION B
GREAT BARRINGTON, MA

Lake Mansfield Outlet Control Structure

Woodard & Curran utilized the HydroCAD model previously prepared by Tighe & Bond as part of the 2013 Lake Mansfield Road Study and evaluated possible solutions for the flooding issues at the Lake Mansfield outlet, north of the beach area. One possible solution identified includes raising the section of road over the outlet control six to twelve inches and replacing the existing pipe with a four-foot wide concrete box culvert. The larger opening of the box culvert would reduce the likelihood of clogging and/or freezing and the concrete structure would support vehicles with minimal cover. This is a simple and maintainable approach that will likely reduce the frequency of road flooding or over-topping events.

A second solution considered includes raising a section of Lake Mansfield road six to twelve inches and installing an overflow structure within the lake. The overflow structure would consist of a precast manhole with a grated horizontal opening at the top and a piped outlet. When the lake water levels rise above a set elevation, water would enter the grated opening, flow through the pipe, and discharge on the other side of Lake Mansfield Road. One advantage to this solution is the possibility of including a manual control for the lake water level. This provides several benefits including the ability to lower the lake prior to large storm events (providing more capacity and reducing likelihood of flooding) and lowering the lake to help control weeds and invasive species.

The intent is for the outlet control structure to not be visually intrusive to the scenic resource of the lake. With topographic data, it can be determined if it makes sense for the outlet control structure to be relocated to the south, closer to the original stream channel.

Replacing the outlet control structure is critical to the success of the project, the durability of the road, and the health of the ecosystems. It should be one of the first of the projects undertaken as a result of this comprehensive plan for the recreation area, and it can be done independently of other projects recommended herein.



Example box culvert; Courtesy of Woodard & Curran



Example outlet control structure; Courtesy of Woodard & Curran

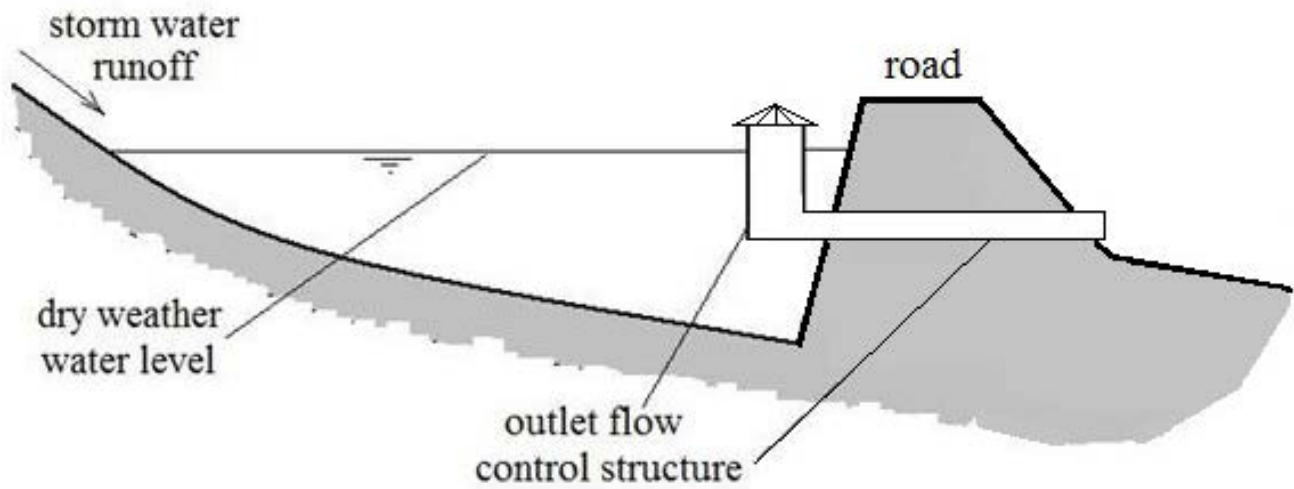
Lake Mansfield Road Outlet Control Key Design Features

Option 1:

- **Raise road 6 to 12 inches over outlet**
- **Install four-foot wide box culvert**
- **Eliminates potential for clogging & freezing**
- **Allows free movement for wildlife**

Option 2:

- **Raise road 6 to 12 inches over outlet**
- **Install overflow structure in lake**
- **Allows manual control of lake level**



Outlet control structure schematic; Courtesy of Woodard & Curran

A topographic survey with accurate elevational data is required for further evaluation of the feasibility of each of the possible solutions identified.

Recreation Area Parking

The recommended parking option for the recreation area keeps the parking north of its existing location to move the parked cars away from the beach and to improve the view when arriving from the north on Lake Mansfield Road. Shifting the parking requires removal of just over one acre (approximately 1.1 acres, or less than 4.0% of the conservation forest) of the conservation forest. The forest here has extensive invasive vegetation (especially *Euonymus alata*s, Burning bush) and its removal will benefit the forest. There are some significant trees in the forest that should be saved and worked into the final design to the extent possible. (Identification of these specimen trees should be completed before a survey is prepared for the site so that they can be included.) In addition, vegetated areas will be included within the parking area so that it maintains a naturalistic feel. These areas will also help with grading the parking and will accommodate pedestrian access. Another consideration of the parking is the objective of retaining the existing rail fence and the apple trees which line the west side of the road along the lake side. The features are considered contributing resources to the character of the space and should be preserved.

The parking area is designed to accommodate twenty-two permanent, paved and striped parking spaces (including three handicap accessible spaces) with an additional twenty-eight overflow and seasonal spaces. The parking has been kept to the east side of the existing alignment of Lake Mansfield Road, but a drop-off or unloading area is located on the beach side so that mobility-impaired visitors, children and/or bags can be dropped off prior to parking. While most of the parking is oriented to the beach and park area (thirteen spaces), nine spaces have been located adjacent to the trailhead. A pedestrian path connects the trail parking to the trailhead.

The parking area has been designed with a one-way loop road and angled parking spaces. This helps reduce the overall width of the parking area and the impact to the conservation forest. The existing accessible loop trail is not impacted.

Area Parking Key Design Features

- **Moves parking to the northeast**
- **Accommodates 50 parking spaces: 22 paved, year-round spaces & 28 permeable seasonal overflow spaces**
- **Creates spaces for trail & spaces near beach**
- **Creates drop-off area**
- **Maintains parking to enjoy scenic resources & sunset**
- **Creates areas for stormwater collection & treatment of paved surfaces**
- **Protects significant trees in forest & park**

It is recommended that a typical bituminous pavement is used for the permanent parking areas. Similar to the road, permeable pavement systems were evaluated for the main parking area but it was determined that the level of maintenance required would be a detriment to the system, especially with the proximity to the beach and the potential for sand to be displaced in the lot. Pairing the pavement system with bio-swales and small detention basins allows the stormwater to be collected and treated prior to entering the groundwater. The seasonal, overflow lot in the center is recommended to be constructed of turf pavers or turf over a crushed gravel base. This area will not be plowed in the winter. It was also discussed whether the drive aisle for the center lot should be paved or a structural turf system. To avoid confusion over where visitors can and cannot park, it is recommended that the drive aisle also be paved.

A key component of the parking design is the relocation of Lake Mansfield Road to the west of the parking area. This eliminates the need to cross the road when walking from parking to the beach and park which was a concern of many of the residents. Pedestrian paths connect the drop-off area and the parking to the pedestrian path which runs parallel to the road, to the beach and park area and to the trailhead. Where these paths must cross the road or parking drives, crosswalks must be installed to alert drivers to the potential of pedestrians. It is the intent that all of these paths meet ADA accessibility Guidelines for access routes with grades less than 5.0% and accessible surfaces. As with the other pedestrian path, it is recommended that these paths are stone dust which is stabilized with additive where necessary (grades over 3.0%).

Because the new parking area is more removed from the road and public areas security may become an issue, especially as the public noted drinking, drugs, and other suspect activities in the parking area in the past. Low level lighting should be included in the parking area and vegetation should not prohibit views in from the park area, the trail, or from the road. Any trees kept in the area should be limbed up and, if shrubs are introduced, they should be less than three feet high.

Finally, crosswalks should be located on the parking area drive and Lake Mansfield Road wherever trails or pedestrian paths intersect the drive lanes. Crosswalks should be located in areas where sight lines are clear so that vehicles are not surprised by pedestrians in the road.

In the pages that follow are an enlargement plan of the recreation area parking and a section through the space. Please note that the grades and elevations shown are assumed; a topographic survey will be necessary to determine the actual elevation of parking areas and gradients.



LAKE MANSFIELD: RECREATION AREA PARKING
GREAT BARRINGTON, MA



Recreation Area: Beach, Park/Play Area & Trails

In the public forums and public surveys, the community has requested the following site amenities be considered in the park: bike parking, volleyball net, tetherball, a consolidated playground, and exercise facilities. However, during a Task Force meeting Kathy Plungis, the Parks Commission Member, stated that the Park Commission is not looking to add to the play structures or change any of the existing amenities. However, in the comprehensive improvement plan, any of the amenities that can be made accessible by providing an accessible route to them should be.

Recreation Area Key Design Features

- **Creates accessible route from parking to beach & includes beach mats**
- **Creates accessible route through park to connect play elements & picnic tables**
- **Relocates changing rooms & toilets out of viewshed**
- **Reclaims & revegetates existing parking area**
- **Maintains existing beach size & location**
- **Protects apple trees & split rail in forest & park**

Creating an accessible route through the park area will be significant to making this part of the community resource open to everyone. The recommendation is to establish a formal path that is graded to meet ADA Accessibility Guidelines and is stone dust or stabilized stone dust—where necessary for steeper grades—which connects the parking and drop-off area, the pedestrian path which parallels Lake Mansfield Road, the park’s amenities, and the beach. Without the road crossing between the parking and beach there appears to be sufficient land to grade for an accessible path. (A topographic survey will be required to confirm this.)

For access to the beach, beach mats provide an accessible route over sand and grass and are suitable for use with standard wheelchairs and strollers. The mats are removable and also help to focus pedestrian traffic to keep people out of sensitive areas.

The shifting of the parking area to the northeast creates usable space of the existing parking location. It is recommended that the changing rooms and portable toilets be relocated to this area. This is move them out of the viewshed when approaching the site from the north on Lake Mansfield Road and opens up more park space for play and passive recreation. In the reclaimed space the facilities will be located on an accessible path and will be screened with vegetation and will be accessible to the beach and parking without a road crossing.



Accessible beach mat on sand at Herring Cove Beach, Cape Cod National Seashore

During the design process, the Task Force and planning team discussed the size of the beach and standards for the sizing of beaches. While the Commonwealth of Massachusetts has no standards for the sizing of beach areas, research revealed from the American Society of Planning Officials published the 1965 *Standards for Outdoor Recreational Areas* which states: “For shoreline swimming, ten effective feet of shoreline will provide space for twenty persons at any one time. One effective foot of shoreline is defined as one lineal foot of shore with the following: 100 foot wide band of water suitable for swimming; 200 foot wide strip of beach for sunbathing and play; 100 foot wide buffer zone for



LAKE MANSFIELD: RECREATION AREA PARKING - SECTION
GREAT BARRINGTON, MA

utilities and picnicking.” The 2015 beach layout for Lake Mansfield provides approximately 120 linear feet of shoreline.

References to design standards for bathing beaches are few and far between. The *New York State Department of Health Rules and Regulations of the State of New York* include a section on Bathing Beaches (Part 6, Subpart 6-2, effective July 6, 2011). The Bathing Beach Design Standards (6-2.19-4.0) include the following excerpts:

Design: The following criteria shall be used for establishing a bathing beach:

- Area: The water surface area of the body of water where the beach is developed shall be at least one acre. When the area is less than four acres and 100 gallons per bather per day of natural flow-through in the bathing area is lacking, a source of dilution water of at least 100 gallons per bather per day must be provided with minimum water quality meeting the provisions of section 6-2.15 of this Subpart.
- Bather use: A minimum of 25 square feet of water surface per bather shall be provided. At least 75 square feet per bather must be provided in the area over four feet deep.
- Land area: At least 35 square feet of land area per bather should be provided.
- Bottom slopes: For depths up to four feet, the slope shall be uniform and not exceed 1:10. For greater depths, the slope should not exceed 1:3.
- Bottom materials: The bottom up to a water depth of six feet shall consist of sand, pea gravel or other similar material.

Similarly, the State of Washington has published their *Designated Swim Area Guidelines*, dated June 2014, which provides similar guidelines, which—regarding ‘bather capacity’—states:

Warm weather, the size of parking lots, the size of neighboring communities, availability of public transportation, and other factors affect the number of people who visit a designated swim area. While it may be hard to know how many people will use a designated swim area, designing the site with the anticipated normal bather load helps to maintain good water quality and to establish lifeguard staffing levels. To calculate bather capacity, the following is recommended:

- Less than five feet Water Depth: 25 square feet of water surface area per bather.
- Greater than five feet Water Depth: 75 square feet of water surface area per bather.
- Diving Area: To determine total visitor load, subtract a minimum of 300 square feet around the diving platforms from the total visitor load of the water surface area.

Sometimes bather capacity may exceed the normal bather load. Some techniques to manage a high bather load include increasing the number of lifeguards and strategic placement of lifeguards, using short breaks to clear people out of the water, providing life jackets, and closing the deep end of the swim area.

The American Red Cross generally recommends that one lifeguard watch no more than fifty people. When lifeguards are on duty at Lake Mansfield, there are always two.

Boat Launch & Knob Hill Road Stormwater

The recommended plan for the boat launch creates six parking spaces—one of which is handicap accessible—which meets the Massachusetts Department of Fish and Game’s Office of Fishing and Boating Access’ request. The spaces have been located on the west side of the Hollenbeck Avenue right-of-way to keep parked vehicles out of the viewshed of the lake from Hollenbeck Avenue. A five-foot offset from the property line allows some buffer space and room for vegetated screening from the adjacent property. The head-in parking spaces allows that most vehicles will not have to back into the curving road to leave the space. A telephone pole is located within the right-of-way and the parking would have to be located to the north of the pole, accommodating the guy wire. It is recommended that the parking be paved and striped to ensure efficient use of the space.

Boat Launch Key Design Features

- **Creates 6 formalized, head-in parking spaces**
- **Eliminates trailer parking**
- **Creates areas for stormwater collection & treatment of paved surfaces**
- **Maintains use as dog beach & cross-lake swimmers**
- **Maintains vegetated buffer adjacent to property line**
- **Includes stormwater improvements for Knob Hill Road**

Relocating and formalizing parking allows for additional vehicles to be accommodated while also providing pedestrian connections, and additional green space. The green space will be necessary for treating some stormwater from Hollenbeck Avenue and Knob Hill Road (though most of it will be handled and treated along the road). The green space also provides for increased habitat for wildlife, and some usable land and water access on the lake edge south of the beach.

The boat launch area will continue to be accessible for cross-lake swimmers, for dogs, and for launching small craft such as kayaks, canoes, and stand-up paddle boards. The size and layout of the parking will eliminate space for trailers.

No docks or boardwalks are recommended at the boat launch.

It is recommended that the stormwater improvements proposed in the 2012 Knob Hill Stormwater Planning Report be implemented. These improvements should be designed and undertaken in conjunction with the recommended work at the boat launch.



6' WIDE PATH

ONE-WAY ROAD,
12' WIDE

STORMWATER
TREATMENT

BOAT LAUNCH

SIGNAGE

PARKING

(6 SPACES)

HOLLENBECK AVE

LAKE MANSFIELD: BOAT LAUNCH
GREAT BARRINGTON, MA



kzla

Lake Mansfield: Water Quality, Control of Aquatic Plants & Shoreline Stabilization

There are several concerns in respect to the lake health:

- Sedimentation from adjacent roads and driveways
- Pollution from road and driveway runoff
- Eroding lake banks along Lake Mansfield Road
- Establishment of invasive aquatic vegetation

These improvements are critical and should be prioritized. For example, stabilizing the lake banks along Lake Mansfield Road is needed to maintain a safe road, but to also stop the erosion of soil into the lake. This erosion has caused the loss of all vegetated buffer zone in this area. To re-establish the lake bank, the road structure will need to be retained with an engineered structure (i.e. wall or sheet pile) and can be covered with a bio-engineered lake bank that would include native planting and natural materials (i.e. core logs) for retaining of soil.

Lake Mansfield Key Design Features

- **Stablize lake bank with engineered structure & bio-engineered bank using native materials**
- **Continued use of benthic mats to control invasive aquatic vegetation at beach**
- **Consider MA DEP-approved herbicides**
- **Restock milfoil weevil**



Placing a benthic mat in lake; Courtesy of www.nysparknaturetimes.com

Sedimentation and pollution can be addressed as noted elsewhere in this report with improvements to Lake Mansfield Road, the recreation area parking, boat launch parking, and Knob Hill Road through the use of traditional as well as green stormwater management control techniques and devices.

The control of invasive aquatic vegetation has been traditionally controlled at Lake Mansfield without herbicides. The use of insects and the weed barrier matting has been somewhat effective, but ultimately may not be sufficient to control the vegetation.

Controlling the lake water level and lowering the water level is something to consider as part of the improvements. Seasonal lowering of water bodies to freeze the lake bottom vegetation has been performed traditionally, but it has not been found to be that effective in aquatic vegetation control. Lowering the water level to provide additional freeboard for flood storage has merit. With any lake water level lowering this will decrease the lake depth and make more areas of the lake susceptible to aquatic vegetation growth. Newly exposed banks would have the potential to grow invasives and new areas of shallower water would also have potential to grow aquatic invasives.



LAKE MANSFIELD: BANK STABILIZATION - SECTION
GREAT BARRINGTON, MA

New England Environmental, Inc. (NEE) prepared a memorandum on Lake Mansfield Management Options in November of 2015. Their recommendations based on site visits and reports prepared by other consultants hired by the Town of Great Barrington include the following:

- Restock the milfoil weevil, as the last stocking was in 2000
- Identify weevil damage on a yearly basis to ensure that the population is effective
- Maintain seasonal benthic barrier installation in swimming area as a low tech approach to weed management
- Conduct aquatic plant survey with GPS/GIS mapping of plant communities
- After aquatic plant survey, whether methods in addition to the weevils are needed to control aquatic plants
- Continue water quality monitoring
- Develop long and short term lake management options

The full memorandum has been included in Appendix C.

Comprehensive Plan Details

Accessibility

Accessible parking spaces must be included with the redevelopment of all parking areas, including the boat launch. It is recommended that at least one accessible trail be included in the main parking area, the accessible spaces should be distributed between the east side near the trailhead and the west side closer to the beach. An accessible route should be provided from accessible parking spaces to the trailhead and to the beach and park area. An accessible parking space should connect from parking to the bathroom and changing stalls. Also, at least one accessible parking space should be provided at the boat launch and should connect to the launch on an accessible route. At least one picnic table and one grill should ADA-compliant and located on an accessible route. Also, if new play equipment is included in the proposed design, it should be designed to meet *American Disability Act Accessibility Guidelines (ADAAG)*.

According to the *Architectural Barrier Act Accessibility Standards (ABAAS)*, accessible paths must be a minimum of three feet wide with passing spaces allocated every 200 feet when the trail is less than four feet wide. Accessible paths are recommended to have a “firm and stable” surface, which include compacted stone dust/crusher fines, bituminous pavement, or concrete walkways. (Compacted gravel, while it can be made to meet the requirements, is not recommended due to the level of maintenance required to keep it in a condition that meets the accessibility requirements.)

According to ABAAS, accessible routes are intended to connect accessible parking spaces or loading zones, streets, and sidewalks to the facilities they serve. Gradients are required to be 5.0% or less with a cross-slope of 2.0% or less. Paths with gradients greater than 5.0% are considered ramps and require handrails and landings; paths with gradients of 8.33% are not acceptable.

Guidelines for accessible trails have some leniencies beyond what is recommended for accessible walkways in ADAAG, specifically trail gradients and distance between passing and resting spaces. According to the USAB’s *Guidelines for Outdoor Developed Areas (GODA)*, accessible trails shall be a minimum of three feet in width without obstacles. Where trails are less than five feet wide—a minimum ideal width—passing spaces are required every 1,000 feet. (Passing spaces shall be a minimum of five feet by five feet.)

As with accessible paths, trails conforming to the Outdoor Developed Areas must have surfaces that are firm and stable. According to GODA, “Paving with concrete or asphalt may be appropriate for highly developed areas. For less developed areas, crushed stone, finer crusher rejects, packed soil, soil stabilizers, and other natural materials may provide a firm and stable surface.” (*Guidelines for Outdoor Developed Areas T303.3*) Depending on the context, the preferred recommendation here is for either asphalt or compacted stone dust/crusher fines. Openings—such as the gaps between timbers of a boardwalk—must be no greater than 1/2-inch.

Tread obstacles are required to be less than two inches in elevation change. Trail gradients should not exceed 10.0% for more than ten feet and should never exceed 12.0%. As with typical access paths, accessible trails are recommended to be 5.0% or less. Gradients of 5.0% to 8.33% are acceptable for stretches of no longer than 200 feet. The cross-slope gradient should not exceed 2.0% where trails have paved surfaces or boardwalk; with other materials—such as gravel or mown turf—the gradient can be increased to a maximum of 5.0%. Resting spaces are recommended to be provided where trail segments are greater than 5.0%; the resting spaces shall be a minimum of five feet in length with a maximum gradient of 2.0% in any direction.

Amenities (benches, waste/recycling receptacles, bike racks, viewing scopes, etc.) provided at trailheads must provide a minimum of 20% of those facilities to be accessible per GODA. Recommendations include clear ground space (dimension depend on the amenity), surface materials and gradients (similar to trail resting intervals), and maximum openings (1/2-inch maximum).

Paving Materials for Lake Mansfield Road & Recreation Area Parking

Typical paving materials for roadways and parking areas include the following: asphalt/bituminous concrete, porous asphalt, macadam, chip and seal, or compacted gravel. Below is a brief description of each of these and then a summary matrix of the proposed hardscape areas and recommended paving materials.

It is recommended that Lake Mansfield Road be paved with a typical bituminous pavement system. Less traditional systems were also considered, but as the road will still be used by emergency vehicles, the pavement needs to be able to withstand heavy loading. While permeable pavement systems were considered for the road, due to the proximity to the lake, it is crucial that stormwater be treated before entering the groundwater. Similarly, for the formal parking areas, bituminous concrete pavement is recommended. The boat launch is so close in location and elevation to the lake, a permeable system could not function as intended.

The seasonal, overflow parking in the center of the parking area is recommended to be constructed of turf pavers or turf over a crushed gravel base. This area will not be plowed in the winter.

Asphalt/Bituminous concrete:

- Asphalt drives typically last around twelve to twenty years depending on quality of construction and usage. They should be seal coated every two to five years and cracks should be repaired as soon as they occur.
- Typical installation of an asphalt road consists of laying eight inches of processed compacted gravel as a base, over solid earth and then applying four inches of asphalt in two layers: a base course (larger aggregate) and a wearing course with smaller aggregate.
- Asphalt drives are not pervious in any way. Any stormwater mitigation is to be dealt with by cross-pitch or crown of the road. The runoff should then be accounted for in the design of the side road conditions.



Bituminous concrete



Porous asphalt



Macadam pavement



Chip and seal pavement

Porous asphalt:

- Porous pavements should be vacuumed swept twice a year with an industrial vacuum sweeper to keep the voids clear. This is to remove accumulated fines that build up in the void spaces in the asphalt from the environment. No deicing agents – including sand or gravel – should ever be used on porous pavement. With proper maintenance porous asphalt has been documented lasting up to twenty years.
- Typical installation of porous asphalt; top coat will consist of permeable asphalt four to six inches thick with 17% void space. A stabilizing layer shall be 2 inches deep and consist of 3/4-inch maximum aggregate size. The base/stone recharge bed should consist of uniformly graded 2 inches (AASHTO No. 2) stone with filter fabric lining the bed to prevent migration of fines and 40% void spacing. The depth of the stone recharge bed will be based on design storm event, but should be no less than 18 inches. It is imperative that the sub-base remain un-compacted. If the sub-base is already compacted the need to scarifying to reestablish permeability is paramount.

- Porous pavement is highly permeable and can be constructed to manage a varying size of design storm events.
- Porous pavements typically require a difference between the finished grade of paving and ground water table of at least two feet. Because of this, porous pavements will not be an option for several areas in the project, i.e. the boat launch.

Macadam:

- Macadam is a buildup of hot liquid asphalt and washed crushed stone. A 3-inch layering of hot asphalt and crushed stone would yield a durable road bed that is more flexible as the ground freezes and thaws, and it maintains a gravel-like appearance.
- Macadam is significantly more durable than gravel, and somewhat more durable than chip and seal. The color depends on the color of the crushed stone and can approximate the color of a gravel surface.

Chip and seal:

- Chip and seal pavement needs to be re surfaced every 7 to 10 years.
- A 3-inch asphalt paving surface would be constructed on a typical bituminous concrete base, and then liquid hot asphalt would be sprayed on that surface to adhere 1/4 to 3/8 of an inch washed crushed stone.

- Chip and seal does not provide permeable road surface. Any stormwater mitigation is to be dealt with by cross pitch or crown of the road. The runoff should then be accounted for in the design of the side road conditions.
- Aesthetically, chip and seal has a surface look similar to a gravel road, while providing a more durable and stable base. Of the alternative road surfaces, chip and seal provides the most flexibility/control with respect to the final color of the road surface, and will have a texture that most closely approximates the existing gravel surface.
- The embedded gravel typically does not stand up very well to heavy traffic and winter plowing. The chip surface would wear off annually exposing the underlying asphalt.
- Chip and seal provides the most flexibility/control with respect to the final color of the road surface, and will have a texture that most closely approximates the existing gravel surface.



Compacted gravel



Turf pavers



Turf over crushed gravel base

Compacted gravel:

- Gravel roads tend to need a considerable amount of maintenance. Gravel driveways continue to be serviceable today when vehicular traffic is light and infrequent and if traffic can be avoided during winter thaw cycles.
- The surface layer of a gravel road needs to be distinctly mixed with an aggregate of fines and different sized angular stones to provide the most suitable surface. With compacted gravel roadways, the crown of the road should be set a minimum 4.0% to provide the best possible drainage for surface water.
- The surface layer of gravel should consist of 3/4-inch maximum aggregate size and a high percentage of plastic fines at a minimum depth of three inches. The base should be a coarse aggregate with few fines at six to twelve inches deep. The sub-base should be compacted.

- Just like chip and seal and asphalt road ways, gravel roads create a sheeting condition and provide little if any permeability. Proper crowning of the road and side treatments are a necessity to divert water from the roadway and prevent erosion.

Turf pavers/turf over crushed gravel base:

- Variations in detail could include turf growing on topsoil mixed with a washed crushed stone, concrete pavers, or HDPE plastic grid with various depth gravel sub-bases capable of supporting emergency vehicles.
- Some of these systems (turf over paver or plastic grid) better support a healthy stand of turf in the Northeast if they are irrigated; a less than ideal situation for this project.
- Suitable for overflow or seasonal parking areas

Paving Materials for Recreation Trails

Pedestrians can use a vast array of trail types and levels of difficulty. Pedestrians may be walking or hiking—which assumes a greater level of effort and/or a longer distance. Surfaces for walking and hiking trails can be made from a variety of materials, including but not limited to: earth, mown turf, stone dust, asphalt, or concrete. Typically, a more natural surface material provides some added degree of difficulty to the trail over a paved surface. On forested trails, it is best to clear the path of all fallen leaves and forest duff; regular use of the trail by hikers will do this automatically.

All of the surface materials discussed above for roadways and parking areas are suitable for pedestrian trails though some (i.e. compacted gravel) require more maintenance to meet accessibility guidelines.

For all of the proposed pedestrian paths included in the plan, the recommendation is for stone dust paths. They are comfortable to walk and run on and blend into the natural landscape better than asphalt. The relatively flat grades along the road are well suited to untreated stone dust. In areas where the gradient



of the path exceed 3.0%, a stabilizer should be added. Stabilizers are 100% natural product which maintains the texture of the stone dust while making it firm, stable and durable.

Stone Dust Trails:

- Stone dust paths require maintenance to meet and maintain accessibility standards of a “firm and stable” surface
- Stone dust surface is installed over sub-base of compacted gravel (eight to ten inches deep)
- Should be avoided for pathways with long pitches of 3.0% or greater

Stabilized Stone Dust Trails:

Stone dust trail

- Same installation and cross-section as stone dust pathways but mixed with organic stabilizer
- More durable surface on relatively flat surfaces than untreated stone dust
- Should be avoided for pathways with long pitches or long pitches of 6.0% or greater



Stabilized stone dust trail

Mown Turf or Grasses Trails:

- Allows for varying of pathway by season
- Does not meet requirements for an accessible trail surface
- Minimal maintenance required



Mown turf/grasses trail

Earth Trails:

- Trail surface is cleared of any organic materials (leaves, needles, roots, bark, etc.) as well as any organic soil so that a more stable mineral soil surface is exposed
- Allows for a drier, less slippery surface
- Commonly used in woodlands areas where paving would be too intrusive and construction is difficult and expensive
- Does not meet requirements for an accessible trail surface
- Minimal maintenance required



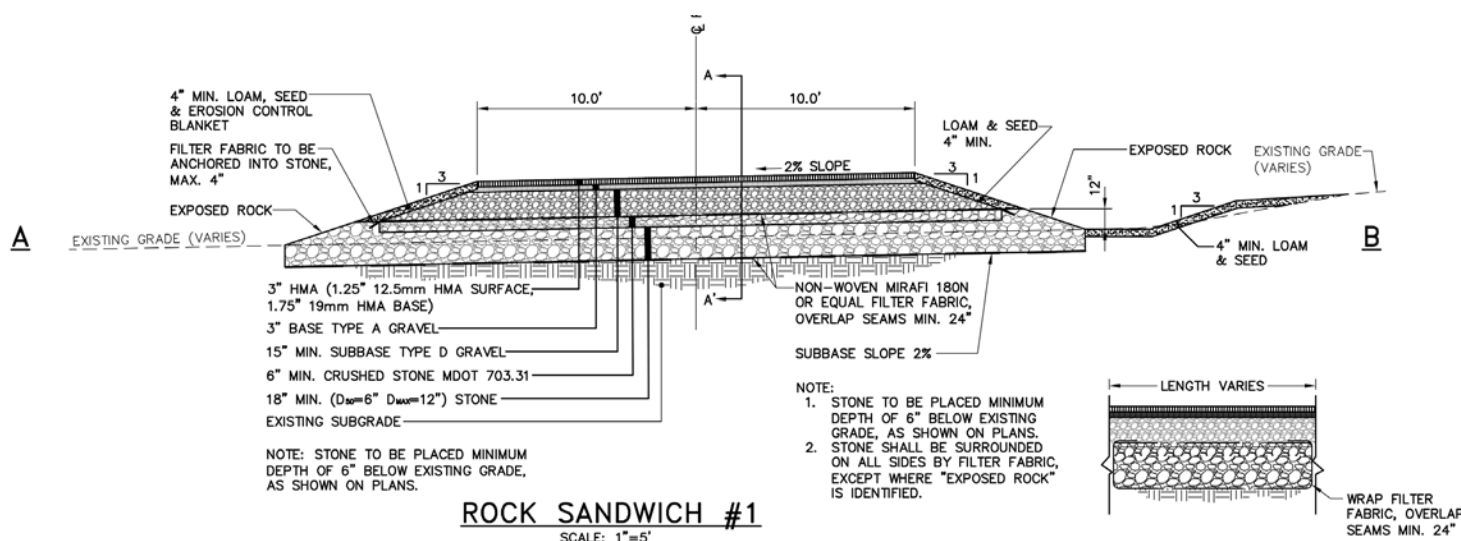
Earth trail

Drainage & Stormwater Control

Stormwater runoff from the upland side of the Lake Mansfield road currently flows through multiple small pipe culverts located beneath the road. Due to the lake water level and the limited space on upland side of the road, these small culverts are shallow and susceptible to clogging and freezing, which results in cracking and heaving of the road above. To improve drainage along Lake Mansfield Road, installation of a stone interceptor drain along the upland side of the road is recommended. The stone interceptor drain requires less horizontal space than a typical drainage swale, an advantage given the tight restraints of the thirty-foot right-of-way. As part of the drainage improvements, the existing culverts would be removed and replaced with sections of fabric-wrapped stone sub-base, commonly refer to as a “rock sandwich,” beneath the road. The rock sandwich base provides a larger inlet area, allows water to flow freely beneath the road, and can be installed with minimal cover.

Bituminous roadway with ‘rock sandwich’ base:

- The difference between this and a typical bituminous concrete pavement system is the composition of the sub-base. The make-up of the bituminous courses is the same. Here, the rock sandwich is comprised of four layers of different size gravel layers in a total depth of forty-two inches over the existing sub-grade.
- The key to this type of system is that the base of layer of stone (the largest aggregate) is placed six inches below the existing grade. This allows the ground water to move freely.
- This is recommended only in specific locations to replace existing drainage culverts as it would be very expensive to implement over the entire length of the road.



“Rock sandwich” roadway cross-section

In addition to finalizing and implementing the Knob Hill Road stormwater improvements, stormwater best management practices (BMPs) will be incorporated into the recreational area and boat launch improvements. Examples of potential BMPs include bio-retention area, stormwater wetlands, proprietary media filters, or water quality swales.

Next Steps

In order to complete the proposed work for the Lake Mansfield recreation area, additional information will be needed. Design needs include:

- Topographic survey of the boat launch, Lake Mansfield Road, and the recreation area and parking. Significant trees in the conservation forest that are desired to be protected should be identified prior to the survey.
- Wetlands delineation to include the eastern bank of Lake Mansfield, the stream at the outlet on the east side of the road and surrounding wetlands, and the NHESP certified vernal pool. It should also be determined if any of the man-made swales on the east side of Lake Mansfield Road now qualify as wetlands.
- Geotechnical data including subsurface investigations along the road, in the proposed parking area, and the boat launch.

Phasing Plan with Sequencing

Schedule for Permitting

The proposed improvements to Lake Mansfield Road, the recreational parking area, and the boat launch will likely require permit approvals from the following agencies:

- Great Barrington Conservation Commission: Wetland Protection Act Notice of Intent (WPA NOI) and Massachusetts Endangered Species Act (MESA)
 - Required for the removal, dredging, filling or altering of “Area Subject to Protection” under M.G.L .C. 131, § 40
- NPDES – US EPA National Pollutant Discharge Elimination System Construction General Permit
 - Required for any activity that disturbs one acre or more of land and results in a discharge to a “Waters of the United States”
- US EPA Stormwater Pollution Prevention Plan (SWPPP)
 - Required for compliance with NPDES Construction General Permit (SWPPP)
- Department of the Army Corps of Engineers: General Permit for Massachusetts (ACoE)
 - Required for activities subject to Corps jurisdiction in waters of the United States

It is estimated it will take approximately three to four months to develop permit applications and obtain the required permit approvals for the proposed improvements.

Cost Estimates

Design & Permitting Estimates

The estimated design and permitting costs for the proposed improvements are as follows:

- Outlet Control: \$60,000
- Lake Mansfield Road (one-way): \$250,000
- Recreation Area Parking: \$50,000
- Boat Launch: \$10,000

Construction Estimates

The opinion of probable construction cost for the proposed improvements are as follows:

- Outlet Control: \$190,000
- Lake Mansfield Road (one-way): \$1,010,000 (Does not include cost for burying of the utility lines.)
- Recreation Area Parking: \$550,000
- Boat Launch: \$60,000

Funding Opportunities

Woodard & Curran's researched and prepared a memorandum for potential local, state and regional funding options for the Lake Mansfield Recreation Area Improvements including the proposed roadway improvements, recreational parking area improvements and boat launch area improvements. The potential funding sources identified included the following:

- Massachusetts Chapter 90 Program
- Massachusetts Land and Water Conservation Fund
- Massachusetts Environmental Trust Grant Programs
- Massachusetts Non-point Source (Section 319) Program

Woodard & Curran also identified several additional potential funding options for the Lake Mansfield Recreation Area Improvements. These funding options are smaller in monetary value (\$50,000 or less), but may be options for funding some of the proposed elements such as beach features (i.e. tables, benches, playground, etc.). Detailed descriptions of all the potential funding options are provided in the funding sources memorandum included in Appendix B.

Woodard & Curran also evaluated potential federal funding options, but it was assessed that the proposed improvements may not be competitive at the majority of the federal funding sources based on the scale and scope of the proposed roadway and parking improvements. One potential federal funding source was identified, however, for the Lake Mansfield outlet control. Since flooding at the Lake Mansfield outlet control structure has been identified in the *Berkshire County Hazard Mitigation Plan*, the FEMA/MEMA Pre-

Disaster Mitigation Grant Program is a potential funding source for the design and implementation of the improvements to the lake outlet control.

Appendices

Appendices

- A. Community Engagement
 - Public Forum Notes
 - 4 November 2015, 13 January 2016, and 2 March 2016
 - On-line Survey Questionnaires & Results
 - No. 1: 27 October – 27 November 2015, No. 2: 14 January – 22 February 2016, and 17 March – 24 April 2016
 - Lake Mansfield Improvements Task Force Meeting Notes
 - 14 September 2015, 16 December 2015, 6 January 2016, 8 February 2016, and 25 April 2016
- B. Lake Mansfield Improvements – Funding Sources Memo, Woodard & Curran, 1 March 2016
- C. Lake Mansfield Outlet Control Solution Notes, Woodard & Curran, 6 February 2016
- D. Lake Mansfield Management Options, New England Environmental, Inc., 4 November 2016
- E. Lake Mansfield Improvements Preliminary Design Studies, December 2015 & March 2016
- F. Lake Mansfield Improvements Cost Estimates

Appendix A: Community Engagement

LAKE MANSFIELD

Meeting Notes

Lake Mansfield Comprehensive Improvements Planning Project

Lake Mansfield Improvements – Public Forum #1, Chrissy Farm

4 November 2015, 7:00pm

In attendance

- Lake Mansfield Improvements Task Force members
- Kyle Zick, KZLA
- Danielle Desilets, KZLA
- Scott Medeiros, Woodard & Curran
- Mickey Marcus, New England Environmental

Below are notes from that meeting and topics discussed, organized by topic:

1. To begin the conversation, KZLA presented slides and discussion about their understanding of the conservation area; its resources, challenges and opportunities; and, previous planning work completed by the Task Force. This information included Lake Mansfield conservation area in the broader context of regional and local recreational and natural opportunities. Project goals were identified as creating: a multi-generational space; a place to celebrate the natural world; a place that reinforces connections throughout the community; a space that embraces scenic, recreational and aesthetic strengths of the landscape; a place that promotes the lake as a resource for healthy living.

What follow are the comments shared by the community members present:

2. General
 - Providing more parking at the beach could bring more people; more people means more danger and less sense of calm; don't necessarily need to increase recreation opportunities
 - Needs more places ("pockets") to pause and build community
 - Make it a recreation space from end to end
 - The recreation area has its growing pains – as does the community – especially in summer; due to volume of cars, and parking
 - Limit parking to residents only? Fees to pay for non-residents?
 - People need access to lake edge to fish; in road is too dangerous
 - LM conservation area should be for people, not cars
 - Beach has no privacy; you feel like you are on the side of a road, not a beach
 - The accessible trail system has no accessible parking; need accessible routes to the lake, to the bathrooms and to parking
 - Area feels very remote at night; it is dark and that's when vandalism occurs
 - People outside GB use the beach and conservation area; should not be limited
 - Intensity of use occurs in the summer: beach, swimming, playground, fishing, picnicking, etc.
 - Is there an opportunity to distribute use better in the recreation area?
 - Best place for fishing is right where the sign says no fishing (private property)
 - Consider enlarging the roped-in swimming area
 - Cross-lake swimming is not allowed elsewhere (i.e. Beartown SF) so it is very significant here

3. Lake Mansfield Road

- Consider signage along road that reminds drivers that there are pedestrians
- Pedestrians should be walking against traffic; and bicyclists with traffic
- Consider closing the road and making it a linear park (huge applause)
- Consider making the road one-way from the boat launch to the parking area – heading north, and using other land for walking/biking lane; Emergency vehicles can be the exception on lane restrictions
- If one-way, consider having multiple places for people to pull over for traffic to pass and some two-way zones
- Keep it two-way
- LM Road is not wide enough for two vehicle lanes
- There are some blind curves and cars do not obey speed making it very dangerous
- Consider an environmentally-sound plan for the road: not all pavement; maybe permeable
- Can the speed be minimized? To 20 mph, for example
- Can the road be moved further to the east? To join beach to parking; to move away from the pond edge on south side
- Does a full depth rebuild and repaving of the road increase traffic volumes and speed?
- Parking on LM Road when the lot is full is an issue for residents who live nearby and it is not enforced by police
- Taking Alford Road/Division Street/Taconic Ave is just a little faster than LM Road to by-pass Main Street
- Consider “No through traffic” signage and enforcement; or “local traffic only”
- Eliminate commercial vehicles
- Need enforcement on LM Road – they do it on Taconic Ave, so why not here?
- Emergency vehicles do not use LM Road as their preferred route
- Flexible markers for lane restrictions?

4. Traffic

- Traffic restrictions need to be considered. There are too many big trucks and the lumber and construction trucks are using Hollenbeck and Lake Mansfield Road (LM Road).
- Downtown traffic on Main Street is awful, especially in summer; pushing locals to try to avoid it using LM Road
- New development is adding 45 homes on ¼-mile stretch of road... what happens to traffic when they are all occupied?
- Are we considering improvements to the underpass at St. James Place; and Christian Hill Road?
- Consider four-way stop at Hollenbeck & Castle Hill Road; needs better traffic management

5. Parking

- Consider parking on the beach side of the road; children run across the road and it's dangerous
- Parking right next to the beach is not appealing to everyone
- Consider a barrier on the edge of the parking lot so that only emergency vehicles can use the road
- Consider striping for optimizing parking
- Fisherman park wherever they want
- Is there a potential for a satellite parking area?
- Need more bike parking and better bike access; could mean less vehicles

6. Boat launch
 - Great access point for swimmers, except the weeds and abandoned fishing hooks
 - Mud and mess here year round – not good for dogs and this is the ‘dog beach’
7. Environmental considerations
 - NHESP-certified vernal pool on the side of LM Road
 - Need to maintain the lake: protect the watershed and what gets into the lake
 - Need infrastructure and educational component – for neighborhood, re. pesticides, etc.
 - Would prefer not to see asphalt, but a more sustainable system
 - Lake edge needs a vegetated strip for filtration
 - Weeds are an issue for cross-lake swimming
 - Increase the size of the culvert
 - Consider signage for turtle/salamander crossing (currently no road closures triggered)
8. Requested amenities
 - Bike parking
 - Fishing platforms
 - Swimming dock (like at Garfield Beach)
 - Boardwalks
 - Volleyball net (like at Lee Beach)
 - Tetherball
 - Adult lap lanes outside of kids beach areas
 - Compostable toilets
9. Select comments and phrases from the evening’s conversation:
 - This is a place “to refresh my soul”
 - This is/should be “a place of calm and peace”
 - Maintain the “welcoming spirit” that is throughout the community
10. KZLA reminded the public that further comment is welcomed and the survey will remain open. As of 11/13/2015, the survey has received 84 responses. A summary of these responses is included below:
 - 82% of the respondents are year-round residents of GB
 - Most attended events in the past year: clean-up day(s), (55%), volunteer efforts (42%), lake celebration day(s) (35%) and run walks (33%)
 - Over 65% of people would like to see more education opportunities presented here and more organized nature walks
 - Top five most popular activities: walking on road, hiking on trails, reading/relaxing/enjoying sunset, playground use and kayaking/SUP/canoeing... and swimming, which was erroneously left of the survey (oops!)
 - More beach space, more nature education opportunities, more hiking trails and were top four requested activities/amenities. A popular write in comment was that it is good the way it is, but needs better maintenance.
 - Inappropriate activities listed included drugs, large private parties, activities that distract from natural settings, power boats and profit-making ventures.
 - Necessary changes included: parking situation, safety of LM Road, improvements to boat lunch area, larger swimming and/or beach area, reduction or elimination of vehicles from LM Road, weeds in the lake and accessibility.
 - What should not change: trails, natural habitat, the quaint character, its simplicity and the community orientation/small town feel.



- Most critical issues were fairly even, but safety along LM Road and the roadway conditions were the highest.

11/13/2015

DDD



Meeting Notes

Lake Mansfield Comprehensive Improvements Planning Project

Lake Mansfield Improvements – Public Forum #3, Great Barrington Fire Station

2 March 2016, 6:00pm

In attendance

- Lake Mansfield Improvements Task Force members
- Kyle Zick, KZLA
- Danielle Desilets, KZLA
- Scott Medeiros, Woodard & Curran

Below are notes from that meeting and topics discussed, organized by topic:

1. To begin the conversation, KZLA discussed the project goal and the reviewed the information collected at, and since, the last public forum in January.
 - a. As stated by the LMITF, the project goal is: To provide improvements for the Lake Mansfield Recreation Area that will support the health of the environment and provide safe access and recreational opportunities for all.
 - b. To help clarify the quality and applicability of each of the options presented for the roadway, recreation are parking and the boat launch, six criteria were identified:
 - i. Impact on Water Quality, Lake Health, and Habitat
 - ii. Impact on Safety for all users
 - iii. Impact on Access to and through the area
 - iv. Construction cost
 - v. Permitting requirements
 - vi. Possible support funding (grants)
 - c. KZLA reiterated that we had met with the emergency services in Great Barrington and each of them agreed that any proposed changes to Lake Mansfield Road would not be any issue for them as long as they maintain access along the lake edge. They will gain access as they see fit based on an emergency.
 - d. KZLA discussed the results from the latest on-line survey which ran for 5½ weeks and received 220 responses. Ultimately, each of the four major questions had a preferred option but for most of the questions, none of the responses were definitive.
2. Next KZLA presented design alternatives for Lake Mansfield Road, as well as parking at the beach and boat launch. The alternatives presented a full range of ideas for community input. New alternatives were produced since the last public forum and since the survey based on feedback. Each of the alternatives were weighed against the six criteria mentioned above and summarized in a matrix by design study.

What follow are the comments shared by the community members present. (These include the written comment cards collected and summarized by the Task Force.):

3. Lake Mansfield Road:
Six options were discussed: (1) maintaining existing conditions; (2) maintaining the existing road with parking improvements; (3) realigning the road around the improved parking; (4) widening

the road to a consistent width with improved parking; (5) reducing the road to one-way (south to north) with pedestrian corridor and improved parking; and, (6) closing the road to vehicular traffic, but improving parking.

- a. Support for maintaining the existing road width with additional signage
 - i. Dehon Rd residents don't want to have to go around to get to the hospital
- b. Support for closed or one-way road as other alternatives do not improve habitat or recreation opportunities
 - i. In town there are very few opportunities for cycling and/or running that are safe; consider this a recreation area
 - ii. This is an opportunity to create a "crown jewel" for the Town with recreational opportunity & natural resources
- c. Support for two-way road with boardwalk; consider a boardwalk that runs the full length
- d. Need to consider turnaround at boat launch area if the road is closed. The adjacent roads cannot support additional traffic.
- e. Signage, policing and outreach will be necessary for any changes in traffic flow
- f. Biggest issue with the road is the speed; people need to share the road for all users
- g. Has to be a two-way road: East Street will take a lot of burden (east of Main Street)
 - i. Residents from Castle Hill to Alford Road will be affected by traffic changes; local residents should be a priority
- h. Road widening will likely impact both the lake edge and the forested edge and ledge; consider certified vernal pool north of whale rock
- i. Two-way road with bike lane requested, but not dimensionally plausible
- j. Need to have vehicle restrictions: vehicle types, weight limits of road, etc.
- k. Roadways traffic is somewhat seasonal
- l. Travel time is no different for Main Street/East Road versus LM Road
- m. Traffic studies were completed based on existing road conditions; If it was evaluated for improved road the traffic counts would like increase
- n. The Town would still plow the road even if it was closed for emergency vehicle use
- o. There used to be areas to fish along LM Road without being in the road, but that land has been lost; also bank edge was fish habitat, now that is lost too
- p. Consider the cross-pitch of the road; it strongly pitches toward the road
- q. Consider a road through the woods to parallel LM Road
- r. History of the road has changed over time: it used to be a dirt path that was seasonal (closed in mud season) and had a strong buffer zone on the lake
 - i. This is an opportunity to impact the future
- s. The existing issues are due to the fact that the road was paved in the 1970s
- t. Fix the road.
- u. This ultimately a question between whether the area is considered a recreation opportunity with natural resources or a transportation corridor

4. Recreation Area Parking

Five options were presented with one that was developed after the feedback from the on-line survey.

- a. Stay away from options with parking up against the fence; drop-off is much better
- b. There will never be enough parking, so please don't design for peak
- c. Beach access cannot be limited due to federal funding requirements
- d. Consider lowering the parking area to eliminate access and sedimentation issues

5. Boat Launch Parking

Five options were presented with one that was developed after the feedback from the on-line survey.

- a. With closed road, boat launch will be used as parking for beach
- b. Boat launch needs to be paved to help reduce sedimentation of lake and improve stormwater runoff
- c. A dock for fishing may not be compatible at the launch as that is where dogs swim and cross-lake swimmers enter the lake plus boaters. Fishing should be elsewhere
- d. Options D & E will accommodate enough space to turn around
- e. Peak use is typically 5 to 6 cars for the launch
- f. Options D & E keep a sight line free of cars which is great
- g. All options improve the sedimentation of the lake

6. General

- a. Consider lowering the lake level to alleviate some of the flooding issues
- b. Requesting more clarity on the relationship between the size of the beach, the number of people and the parking counts

7. Next Steps

- a. New survey to be prepared and publicized. Some comments about what to include:
 - i. Make it clear that the parking options are all relative to what is available today.
 - ii. Ask the essential question: If your priority for this landscape as a recreation area/natural habitat, or a transportation corridor?
 - iii. Request community's priority project: recreation parking, habitat/lake buffer zone improvement, boat launch, etc.
- b. After final survey results and Task Force meetings, a final preferred alternative will be developed with a summary report. Final plan to be presented to the Selectboard.
- c. Timeline for selecting a preferred option is in two months time and then make a recommendation to the Selectboard within a month or two. The goal would be to go to Town meeting in 2017, not this spring.

3/7/2016

ddd



Lake Mansfield Improvements Public Input Survey

Welcome to our survey for the Lake Mansfield Improvements

After a decade of cleanup and restoration efforts by the Lake Mansfield Improvement Task Force and the Lake Mansfield Alliance, the lake is a popular year-round recreational retreat for the entire town of Great Barrington, Massachusetts. The Lake Mansfield Improvements project will develop a comprehensive plan for implementation of improvements; illustrate the improvement options; identify all environmental and permitting requirements related to each improvement; recommend a phasing/sequencing plan; and, schedule for improvements including permitting, and develop estimated costs for design, permitting and construction.

As a part of this process, the Lake Mansfield Improvement Task Force will hold a series of public forums to gain input from the community. The first meeting will be held on Wednesday, November 4th at 7:00 pm at Chrissy Farm. At this meeting, we will discuss the existing landscape, site related conditions and begin to develop a wish list of features and ideas for improvement.

To gain additional information from community members who were not able to attend or did attend and would like to provide additional input on the design for the park, we have created this survey.

If you have additional questions or concerns, please feel free to contact: Chris Rembold, Town Planner at: crembold@townofgb.org

Thank you for participating in our survey. Your input is very important to this process.



Lake Mansfield Improvements Public Input Survey

1. Are you a year-round resident of Great Barrington?

- ☐ Yes, I am a year-round resident
- ☐ No, I own property in Great Barrington, but do not live there year round.
- ☐ No, I live outside of Great Barrington



Lake Mansfield Improvements Public Input Survey

2. In the past, which events and activities did you attend at Lake Mansfield? (Check all that apply)

- ☐ Lake celebration day(s)
- ☐ Yoga on the beach
- ☐ Children's swim lessons
- ☐ Annual fishing derby
- ☐ Clean-up day(s)
- ☐ Volunteer efforts
- ☐ Run/walks (i.e. organized 5Ks)

Other (please specify)

3. What events would you like to see in the park in the future?

- ☐ Organized nature walks
- ☐ Holiday celebrations
- ☐ Art/crafts events
- ☐ Educational opportunities

Other (please specify)



Lake Mansfield Improvements Public Input Survey

4. What activities have you participated in at Lake Mansfield?

- | | |
|---|---|
| <input type="checkbox"/> Walking (on road) | <input type="checkbox"/> Picnicking |
| <input type="checkbox"/> Hiking (on trails) | <input type="checkbox"/> Sunbathing |
| <input type="checkbox"/> Running (road or trails) | <input type="checkbox"/> Reading/relaxing/enjoying the sunset |
| <input type="checkbox"/> General exercise | <input type="checkbox"/> Fishing |
| <input type="checkbox"/> Biking (road or trails) | <input type="checkbox"/> Ice fishing/Ice skating |
| <input type="checkbox"/> Dog walking | <input type="checkbox"/> Kayaking/Canoeing/Stand-up paddle boarding |
| <input type="checkbox"/> Playground use | <input type="checkbox"/> Bird watching |

Other (please specify)

5. For which activity to you enjoy this landscape most regularly? (Please select in order of use)

	(1) Most often	(1) Second most often	(3) Third most often
Walking (on road)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hiking (on trails)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Running (road or trails)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biking (road or trails)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bird watching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dog walking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Swimming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Picnicking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sunbathing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reading/relaxing/enjoying the sunset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Playground use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kayaking/Canoeing/Stand-up paddle boarding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fishing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ice fishing/ice skating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cross-country skiing/snow shoeing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

6. What additional activities/amenities would you like to see accommodated at the park?

- | | |
|---|---|
| <input type="checkbox"/> More beach space | <input type="checkbox"/> Exercise facilities |
| <input type="checkbox"/> More hiking trails | <input type="checkbox"/> More bike racks |
| <input type="checkbox"/> Consolidated playground | <input type="checkbox"/> Improved boat launch |
| <input type="checkbox"/> Nature education opportunities | |

Other (please specify)



Lake Mansfield Improvements Public Input Survey

7. Are there park uses that you feel are inappropriate in the Lake Mansfield landscape?

8. If you could change anything about the Lake Mansfield site what would you change? Or, what change do you think is most necessary?

9. What do you think should not change about the park?

10. What do you think are the most critical issues to be dealt with?

	Most important	Somewhat important	Not important
Water quality/sedimentation of the lake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Invasive plants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flooding of the lake outlet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accessibility at the parking, beach and lawn area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safety along Lake Mansfield Road	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Roadway condition & lake edge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public/private land ownership	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality/aesthetics of open land (beach and lawn areas)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Balance between conservation & recreation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Balance between public open space & circulation (roadway)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Lake Mansfield Improvements Public Input Survey

11. What kind of park would you like to see this become? What would like to see this landscape look like in 5 or 10 years?

12. Are the ways in which you think this park could better benefit the community?

13. Do you have a favorite memory from the area which you would like to share?

14. Please share any other potential site improvements that you would like to see in the public landscape around Lake Mansfield:

Lake Mansfield Comprehensive Improvements Planning project

Survey no. 1 Summary

10 December 2015

The survey was available for responses from Tuesday, October 27th, 2015 until Saturday, November 27st. In that time, 95 people responded to the survey. Not everyone who responded answered all of the questions.

1. Are you a year-round resident of Great Barrington?

- 83.2% said yes, full time
- 7.4% said they owned property but not a year round resident
- 9.4% live outside Great Barrington

2. In the past, which events and activities did you and/or your family attend at Lake Mansfield? (Select all that apply)

- Park clean-up days 57%
- Lake celebration day(s) 43%
- Volunteer efforts 43%
- Run/walks (i.e. organized 5Ks) 35%
- Children's swim lessons 20%
- Annual fishing derby 18%
- Yoga on the beach 12%
- Other responses included: heritage/guided walks, mini triathlon, and private picnics/birthday parties (anything that was not considered an "event" was excluded from these responses)

3. What events would you like to see in the park in the coming years? (Select all that apply)

- Educational opportunities 70%
- Nature walks 66%
- Holiday celebrations 29%
- Art/crafts events 14%
- Other responses included: workshop on plant identification (natives, invasives, & mushroom) and use, nature activities for children (esp. in fall), canoe/kayak gatherings, winter festivals, and swimming activities (anything that was not considered an "event" was excluded from these responses)

4. What activities have you participated in at Lake Mansfield? (Select all that apply)

- Walking (on road) 78%
- Hiking (on trails) 69%
- Reading/relaxing/enjoying the sunset 67%
- Playground use 56%
- Picnicking 56%
- Kayaking/Canoeing/Stand-up paddle boarding 53%
- Sunbathing 46%

- Ice fishing/ice skating 40%
- Bird watching 33%
- Running (road or trails) 30%
- Biking (road or trails) 28%
- Fishing 24%
- Dog walking 22%
- Other responses included: cross-country skiing, nature observation, quiet meditation, and swimming (repeatedly, since it was omitted from the list in error)

5. For which activity to you enjoy this landscape most regularly? (Select three only)

- Walking (on road) Most often: 42 responses
- Swimming Most often: 28 responses
- Hiking (on trails) Most often: 16 responses
- Reading/relaxing/etc. Most often: 14 responses
- Running (road or trails) Most often: 8 responses
- *Top five responses included herein
- Hiking (on trails) 2nd most often: 15 responses
- Picnicking 2nd most often: 9 responses
- Reading/relaxing/etc. 2nd most often: 9 responses
- Walking (on road) 2nd most often: 7 responses
- Swimming 2nd most often: 7 responses
- *Top five responses included herein

6. What activities/amenities would you like to see accommodated at the park?

- Nature education opportunities 45%
- More beach space 42%
- More hiking trails 32%
- More bike racks 29%
- Consolidated playground 14%
- Exercise facilities 11%
- Other responses included: no additional facilities (repeatedly stated saying they like the current level of development); buffer zone restoration; passive use access areas along the length of shoreline for fishing, nature observation, & sitting; better ground surface under swings; compostable toilets; camping; area for pets to enjoy the lake; and, better playground

7. Are there any park uses that you feel are inappropriate in the Lake Mansfield landscape?

- Motor boats/ATVs/ Snowmobiles (6)
- Very large, private gatherings (5)
- Drugs (2)
- Expanded parking, playground & permanent bathrooms
- Anything that infringes on natural beauty
- Dogs in beach

- Commercial trucks & trailers
 - Arts & crafts
 - Bike trails
 - Expanded beach
 - Profit making ventures
 - Fishing at boat launch
 - Non-residents
- * (#s) indicate that a response was given more than once, if no number included, the response was given only once

8. If you could change anything about the Lake Mansfield site what would you change? Or, what change do you think is most necessary?

- Circulation & parking
 - Create linear park along shoreline/safer walking path for pedestrians (14)
 - One-way road, without direction designated (7)
 - Improve parking area (7)
 - Fix road (5)
 - Close the road & make it pedestrian only (4)
 - Close to through traffic (4)
 - Ban roadside parking (3)
 - One-way road headed north (3)
 - One-way road headed south toward hospital (3)
 - Commercial vehicle ban on road
 - Guardrails
 - Enlarge parking area
 - Parking passes for residents
 - Accessibility
- Ecological concerns
 - Weed control (2)
 - Better buffer zones along lake
 - Water quality improvement of lake
- Access
 - Too many out-of-towners/restrict to residents (4)
 - Improve boat launch
 - No swimmers at boat launch
 - No dogs
- Park amenities
 - Increase beach area (3)
 - Larger swim area (2)
 - Improve playground
 - Better bathrooms
 - Improve lawn area
 - Replace broken amenities (picnic tables)
- Nothing

9. What do you think should not change about the park?

- The small scale/small-town feel/quaint character (7)
- Keep it open to general public (4)
- Do not change size of beach (4)
- Natural scenery/habitat (4)
- Perfect the way it is/don't change it too much (3)
- Parking should not be increased (3)
- Trails (3)
- Increase beach size (2)
- Keep picnic facilities (grills & picnic tables) (2)
- Keep play equipment (2)
- Keep changing rooms & bathrooms (2)
- Increase parking
- Having lifeguards
- Keep boat launch for dogs to swim
- Boating restrictions should remain
- Whale rock
- Cost of admission

10. What do you think are the most critical issues to be dealt with?

Most important

- Safety along Lake Mansfield Road 56/74 responses
- Roadway condition & lake edge 48/74 responses
- Water quality/sedimentation of lake 46/74 responses
- Balance between public open space & circulation 39/74 responses
- Invasive plants 37/74 responses
- Balance between conservation & recreation 31/74 responses
- Quality/aesthetics of open land (beach & lawn areas) 26/74 responses
- Accessibility at the parking, beach & lawn area 14/74 responses
- Parking 13/74 responses
- Flooding of the lake outlet 13/74 responses
- Public/private land ownership 6/74 responses

Somewhat important

- Accessibility at the parking, beach & lawn area 29/74 responses
- Parking 29/74 responses
- Flooding of the lake outlet 28/74 responses
- Quality/aesthetics of open land (beach & lawn areas) 27/74 responses
- Balance between conservation & recreation 25/74 responses
- Public/private land ownership 24/74 responses
- Balance between public open space & circulation 19/74 responses
- Invasive plants 18/74 responses
- Roadway condition & lake edge 15/74 responses
- Safety along Lake Mansfield Road 11/74 responses

Not important

- Public/private land ownership 18/74 responses
- Accessibility at the parking, beach & lawn area 11/74 responses

- Parking 8/74 responses
- Flooding of the lake outlet 7/74 responses
- Quality/aesthetics of open land (beach & lawn areas) 7/74 responses
- Invasive plants 4/74 responses
- Water quality/sedimentation of lake 2/74 responses
- Roadway condition & lake edge 2/74 responses
- Balance between conservation & recreation 2/74 responses
- Balance between public open space & circulation 1/74 responses
- Safety along Lake Mansfield Road 0/74 responses

11. What kind of park would you like to see this become? What would like to see this landscape look like in 5 or 10 years?

- Quality of park
 - A peaceful place of natural refuge/scenic resources (12)
 - Keep it the way it is (8)
 - Family-friendly/ community park/open to all (4)
 - Minimal alterations/development (3)
 - Passive recreation focus (2)
 - Accommodating both young families and adults who want a quiet place in nature
 - For local residents
- Circulation & parking
 - One-way road from with delineated bike/walking path/lane (17)
 - Closed to through traffic with delineated bike/walking path/lane (4)
 - Limiting and slowing traffic on road with traffic calming measures (4)
 - Enhance lake edge buffer/ shoreline restoration (2)
 - Redeveloped parking (2)
 - No expansion to parking (2)
 - Create boardwalk for pedestrians at narrow points
 - Retain two-way traffic, re-route behind parking/rebuild road
 - Prevent roadside parking
 - Safe access from parking to beach without crossing road
 - Encourage people to bike or walk to park
- Park amenities
 - Larger beach area (3)
 - Larger swimming area (3)
 - Improved boat launch (2)
 - Provide educational opportunities on nature (2)
 - Trails to remain
 - More trails
 - Beach area to remain
 - Expanded park space
 - More passive concessions (tables, grills, benches, etc.)
 - Improved playground
- Ecological improvements
 - Healthier lake ecosystem (2)

- Well-landscapes park with diverse plantings (2)
- Management of sedimentation
- More native plants
- Environmental restoration

12. Are the ways in which you think this landscape could better benefit the community?

- More educational opportunities (e.g. ecosystems) (8)
- Walking/biking path for safety (7)
- Reduced traffic volume/speeds (3)
- Expanding park/better boat launch makes it a better community asset (3)
- Nothing (3)
- Local community park, residents only (2)
- Expanded winter uses/programming (2)
- Better maintenance will help (2)
- Quiet refuge from Route 7/Main Street
- Larger swimming area
- Passive recreation
- Fishing spots along the lake shoreline
- Cleaner water/control of weeds
- Wildness is a benefit to community
- Habitat improvements
- Better promotion of events/activities
- Teenager events

13. Do you have a favorite memory from the area which you would like to share?

- Wonderful spot for kids and grandkids to play outside (7)
- Bird watching (5)
- Community skating on the lake/campfires & cocoa afterwards (5)
- Walks/runs along lake (4)
- Canoeing/kayaking on the lake (3)
- Exploring the natural resources (3)
- Kids fishing (3)
- Watching sunsets/night sky (3)
- Skinny dipping/swimming (3)
- Birthday parties at the lake/family cookouts (2)
- Playing on the beach
- Volunteer efforts
- Letting dogs play
- Censored memories!
- Winter Celebration from BG's 250th

14. Please share any other potential site improvements that you would like to see at Lake Mansfield, the beach and conservation forest:

- Reduction in use of fertilizers, pesticides, herbicides through education
- Reduce stormwater runoff
- Sitting areas/areas of refuge along the shoreline for meditation



- Trail system around the lake
- Plants for pollinators, birds & mammals
- Raised flower beds along split rail fence



Improvements to the Lake Mansfield Recreation Area Public Survey #2

Welcome to our 2nd community survey for the Improvements to the Lake Mansfield Recreation Area

After a decade of cleanup and restoration efforts by the Lake Mansfield Improvement Task Force and the Lake Mansfield Alliance, the lake is a popular year-round recreational retreat for the entire town of Great Barrington, Massachusetts. The Lake Mansfield Improvements project will develop a comprehensive plan for implementation of improvements; illustrate the improvement options; identify all environmental and permitting requirements related to each improvement; recommend a phasing/sequencing plan; and, schedule for improvements including permitting, and develop estimated costs for design, permitting and construction.

As a part of this process, the Lake Mansfield Improvement Task Force will hold a series of public forums to gain input from the community. The first meeting was held on Wednesday, November 4th. At that meeting, we discussed the existing landscape, site related conditions and begin to develop a wish list of features and ideas for improvement.

This second survey follows the second public forum which was held on Wednesday, January 13th at 7:00 p.m. at Monument Valley Regional Middle School. The information presented at that forum is included herein and includes preliminary improvement options for Lake Mansfield Road, the beach parking and the boat launch areas.

If you have additional questions or concerns, please feel free to contact: Chris Rembold, Town Planner at: crembold@townofgb.org



Improvements to the Lake Mansfield Recreation Area Public Survey #2

Lake Mansfield Road Improvements

There are four (4) potential options for what the master plan can recommend for Lake Mansfield Road:

Option A: *Leave the road bed and traffic patterns as is*(two-way), but improve the beach parking area



Maintaining the road as is has both pros and cons:

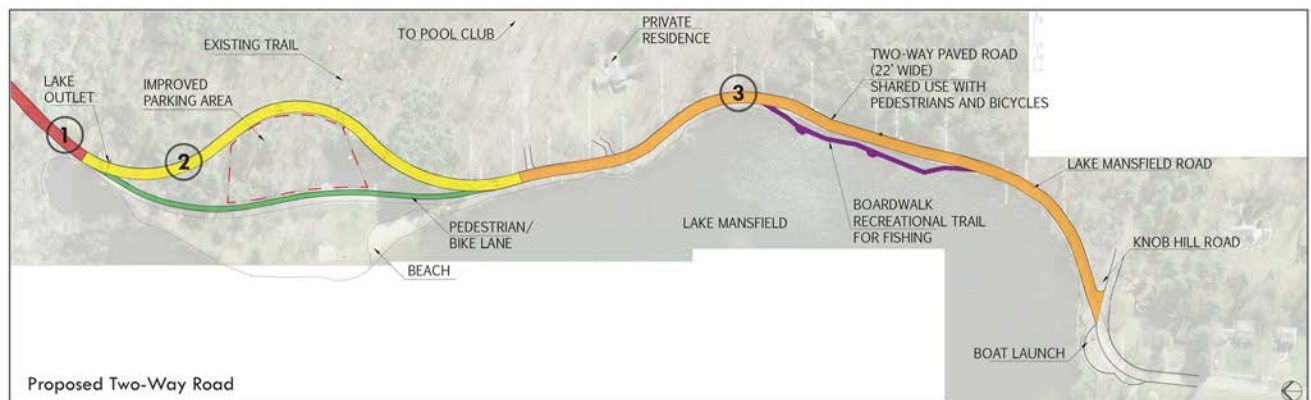
PROS:

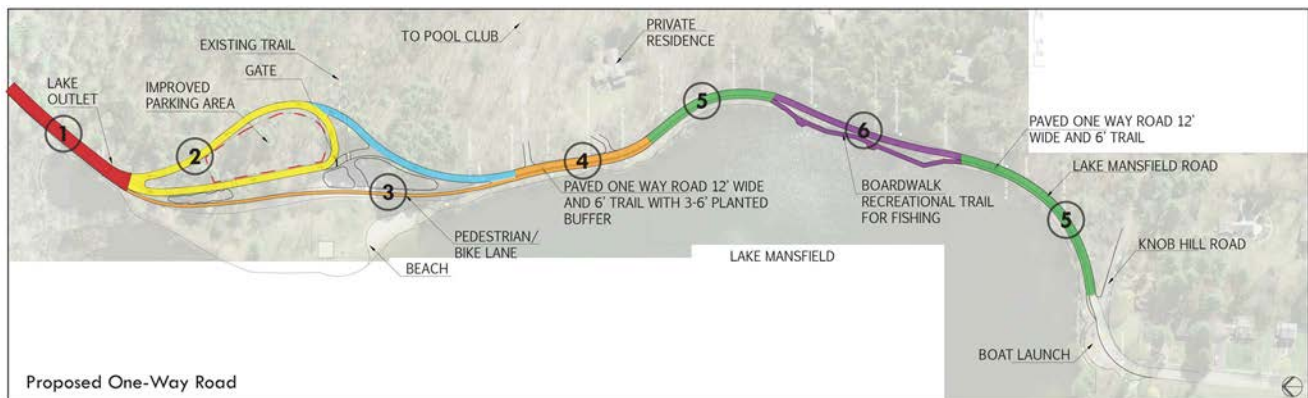
- Minimal disturbance to fix road: this would include patching the existing road and only creating a new roadway around the proposed parking improvements
- Lake Mansfield Road and the parking area is moved away from beach front and the passive recreation area improving safety
- Helps to reduce runoff and sedimentation from parking into lake
- Lake outlet will be repaired to reduce flooding
- This option could be a phase 1 solution prior to making other improvements
- This is the least expensive of all the roadway options

CONS:

- Lake Mansfield Road needs to be re-surfaced and the patching would only last approximately 3-5 years before needing to be repaired again
- Roadway is still shared use and therefore no safety improvements will have been made
- Lake edge condition not improved
- Freeze/thaw cycle will remain a problem for existing roadbed
- Some loss to conservation forest for improved parking area

Option B: *Maintain the road as two-way*, but reconstruct the road bed to meet current standards and widen to a consistent 22-foot width, with an improved parking area





Creating a one-way road, of course, also has its pros and cons:

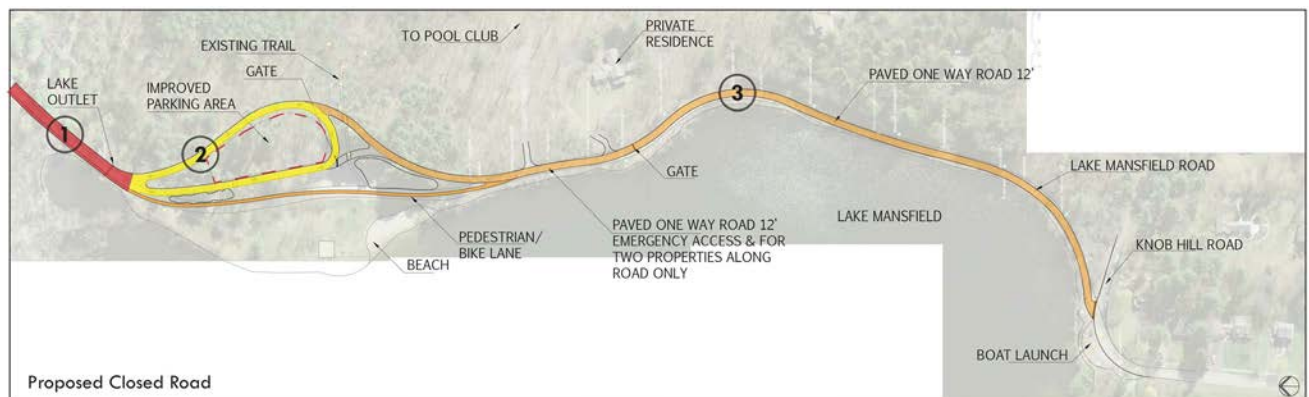
PROS:

- Re-imagines Lake Mansfield Road as a park road between the parking area and boat launch
- Wider one-way lane improves safety and accessibility for cars and pedestrians
- Creates a pedestrian/cyclist path separate from car travel lane
- Lowers vehicle traffic volume and potentially speeds around parking area
- Less impervious pavement than two-way options which improves provides numerous ecological benefits
- Boardwalk provides recreation space for fishing and walking (boardwalk not required to make this option work)
- Improved lake edge condition within right-of-way which improves health of lake, as well as wildlife habitat
- Narrow roadbed would eliminate the potential for on-road parking
- Lake Mansfield Road and the parking area is moved away from beach front and the passive recreation area improving safety
- Helps to reduce runoff and sedimentation from parking into lake
- Lake outlet will be repaired to reduce flooding
- This is a moderately priced option

CONS:

- Through traffic is limited to one-way (likely south to north)
- Construction will impact the road from parking to boat launch

Option D: Close the road from the beach/trail parking to the boat launch with parking at each end, as well as an improved parking area



Closing the road also has its positive and negative aspects:

PROS:

- Re-imagines Lake Mansfield Road as a linear parkway between the parking area and boat launch
- Creates a pedestrian/cyclist path separate from car travel lane which increase safety along the road
- Less impervious pavement than two-way options which improves provides numerous ecological benefits
- Boardwalk provides recreation space for fishing and walking (boardwalk not required to make this option work)
- Improved lake edge condition within right-of-way which improves health of lake, as well as wildlife habitat
- Lake Mansfield Road and the parking area is moved away from beach front and the passive recreation area improving safety
- Helps to reduce runoff and sedimentation from parking into lake
- Lake outlet will be repaired to reduce flooding
- This is a moderately priced option

CONS:

- Through traffic is limited to emergency services vehicles and to the two properties located between the parking area and the boat launch (access from the recreation parking area only)
- Construction will impact the road from parking to boat launch

1. Which of these four options do you prefer for Lake Mansfield Road?

- ☐ A. **Leave the road as is**, but improve the parking at the beach
- ☐ B. **Maintain a two-way road** by reconstructing the road to meet current standards, including a consistent 22-foot wide road bed, and an improved parking area
- ☐ C. Narrow the road to a **one-way road from the boat launch to the beach parking** (with traffic likely heading south-to-north) with a separate lane for pedestrians and cyclists on the water side, and an improved parking area
- ☐ D. **Close the road from the boat launch to the beach parking** with turnarounds at each end, and improved parking area

2. What was it about this option that made you select it as most preferable?



Improvements to the Lake Mansfield Recreation Area Public Survey #2

Recreation Area Parking Improvements

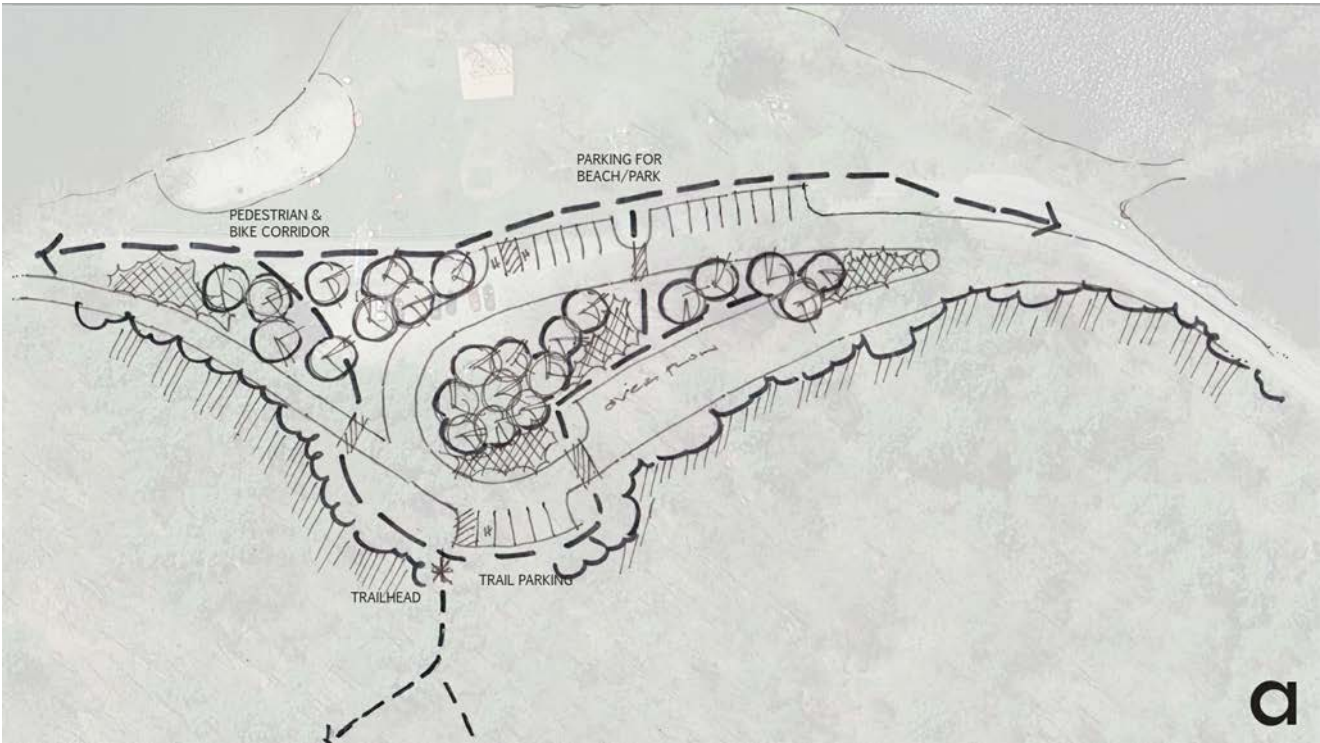
Four (4) options have been studied for the parking near the beach, trailhead, and recreation area. Each have their own positive and negative aspects.

All of these parking options have approximately the same number of permanent parking spaces (approximately 20) with some designated as year-round and some as seasonal overflow spaces (not included in the permanent spaces). The dashed lines shown are proposed trails or paved pedestrian walkways.

Existing conditions



Option A:



OPTION A:

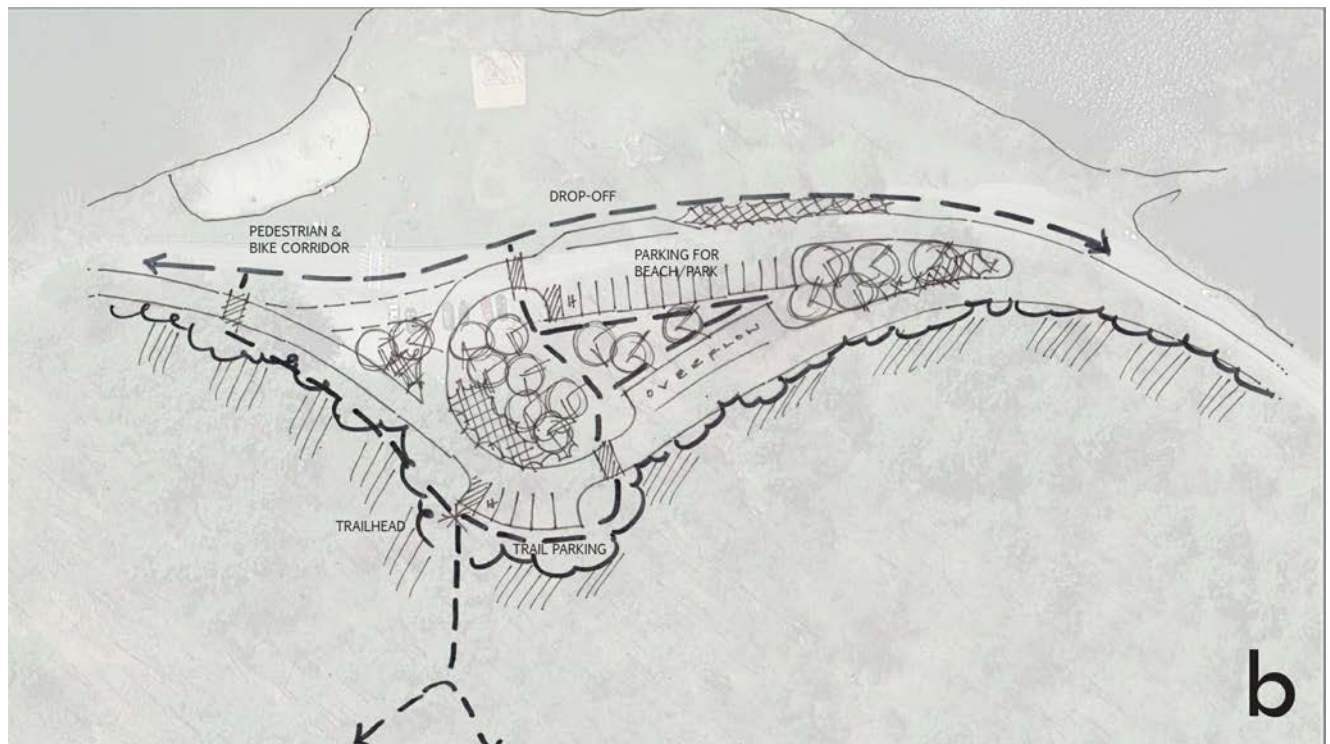
PROS:

- Allows direct pedestrian connection from parking to beach/recreation area without crossing the road
- Creates new space for passive recreation at existing parking area
- Maintains existing beach/passive park area/keeps parking and road outside
- Provides stormwater treatment areas to reduce erosion and sedimentation of lake
- Reconfigured road layout should slow traffic
- Moving parking away from beach provides opportunity to create an accessible route from parking to beach
- Moving parking away from beach also provides opportunity to increase beach and/or passive recreation area

CONS:

- Emergency vehicles would have to drive through parking area to access road
- Would require some impact to conservation forest and trail system
- First view of space (from Christian Hill Road) may include the parking area

Option B:



OPTION B:

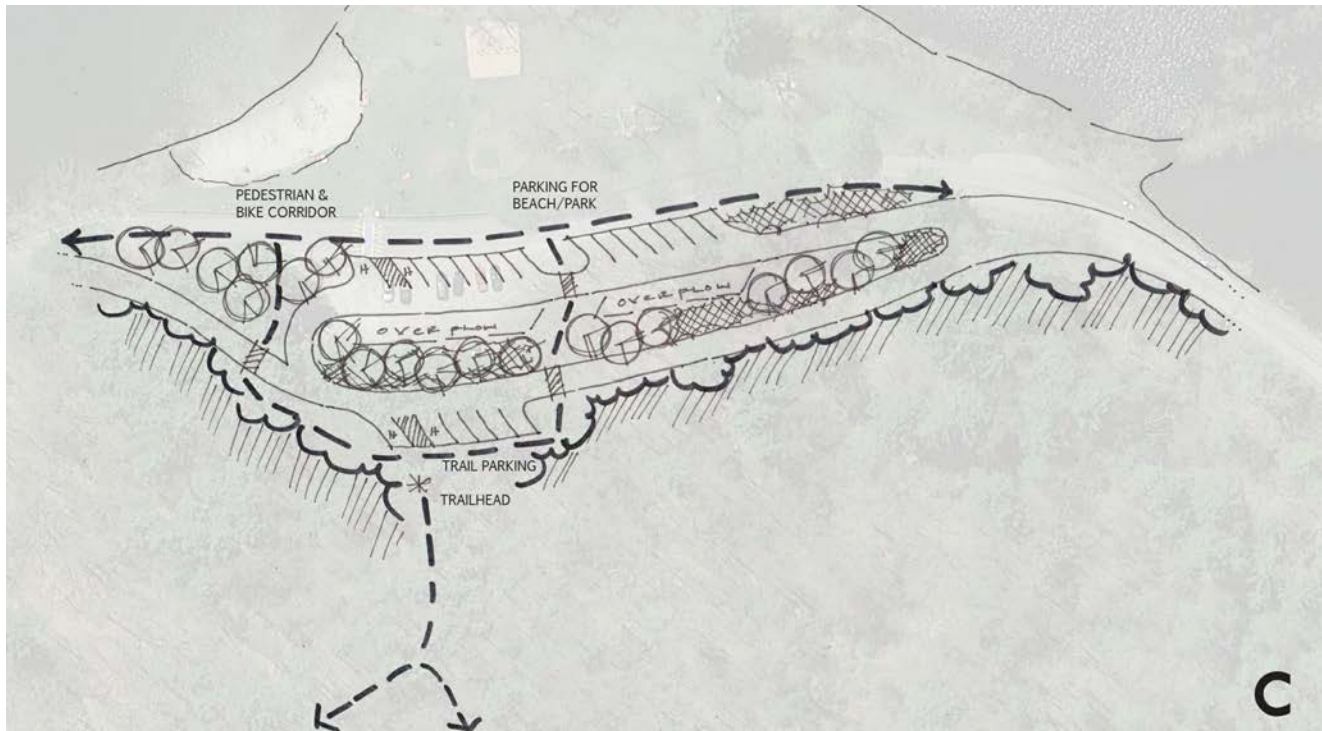
PROS:

- Pedestrian drop-off only on beach side of road
- Creates a new space for passive recreation at existing parking area
- Maintains existing beach & recreation area
- Provides stormwater treatment areas
- Moves parked vehicles out of view from beach
- Reconfigured road layout should slow traffic
- Moving parking away from beach provides opportunity to create an accessible route from parking to beach
- Moving parking away from beach also provides opportunity to increase beach and/or passive recreation area

CONS:

- No parking on beach side means pedestrians must cross road
- Emergency vehicles must drive through parking area to reach road
- Requires some impacts to conservation forest and trail system

Option C:



OPTION C:

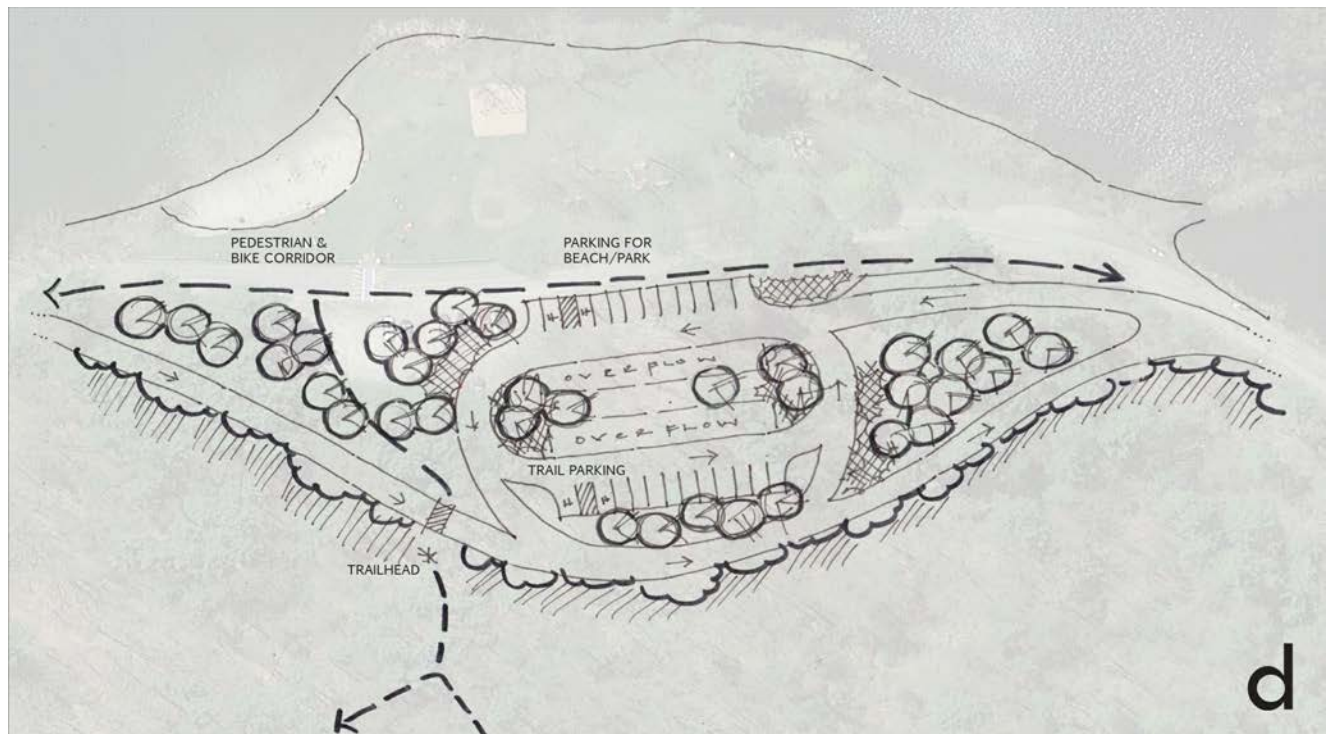
PROS:

- Allows direct pedestrian connection from parking to recreation area without crossing road
- Maintains existing beach & recreation areas
- Provides stormwater treatment areas
- Reconfigured road layout should slow traffic
- Moving parking away from beach provides opportunity to create an accessible route from parking to beach
- Moving parking away from beach also provides opportunity to increase beach and/or passive recreation area

CONS:

- Emergency vehicles have to drive through parking area to reach road
- Minimal impact to conservation forest & trail system
- Creates no new space for passive recreation
- Only works with one-way traffic in parking area due to angled spaces

Option D:



OPTION D:

PROS:

- Allows direct pedestrian connection from parking to recreation area without crossing road
- Drop-off on beach side of road
- Creates new space for passive recreation at existing parking area
- Maintains existing beach and passive recreation areas
- Provides stormwater treatment areas
- Reconfigured road layout should slow traffic
- Moving parking away from beach provides opportunity to create an accessible route from parking to beach
- Moving parking away from beach also provides opportunity to increase beach and/or passive recreation area

CONS:

- Emergency vehicles have to drive through parking area to access road
- More impacts to conservation forest & trail system than other options

3. Which of these options for you prefer for the recreation area parking?

- ☐ Option A
- ☐ Option B
- ☐ Option C
- ☐ Option D

4. What was it about this option that made you select it as most preferable?



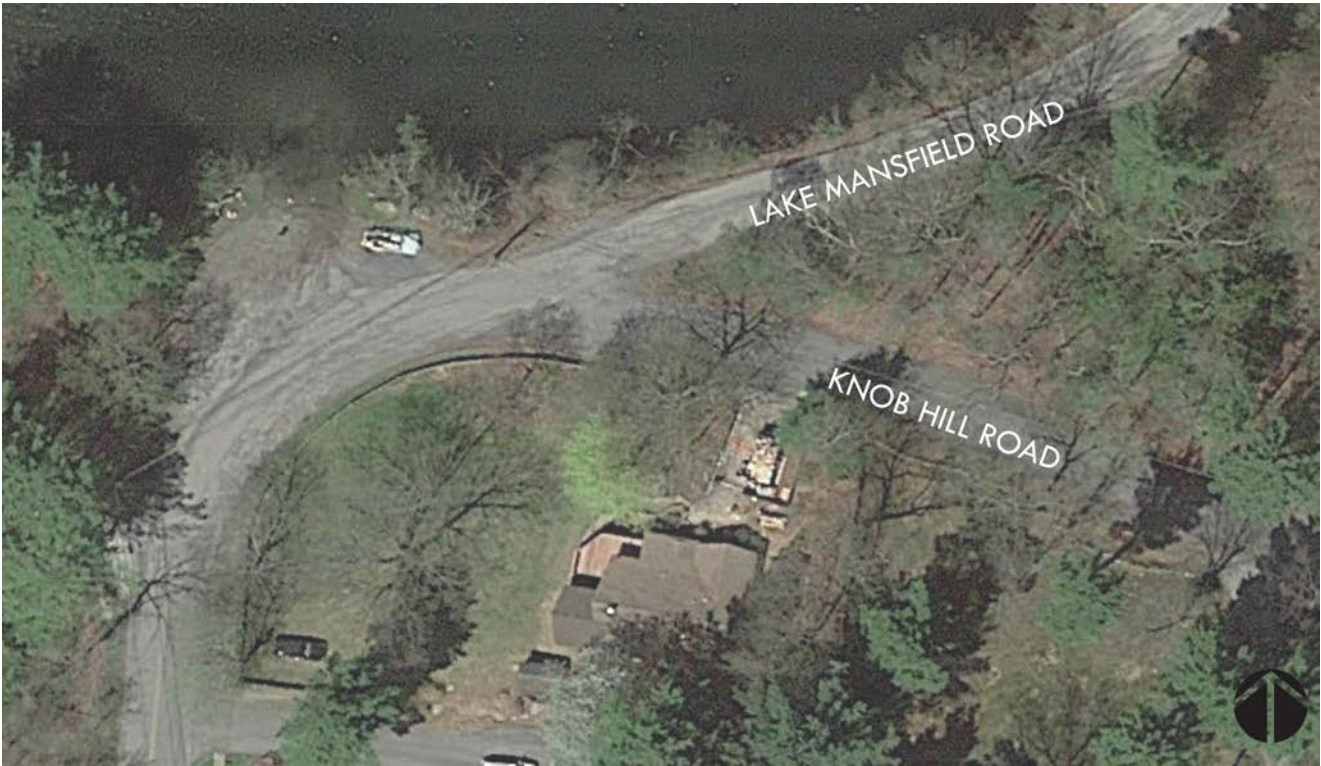
Improvements to the Lake Mansfield Recreation Area Public Survey #2

Lake Mansfield Boat Launch

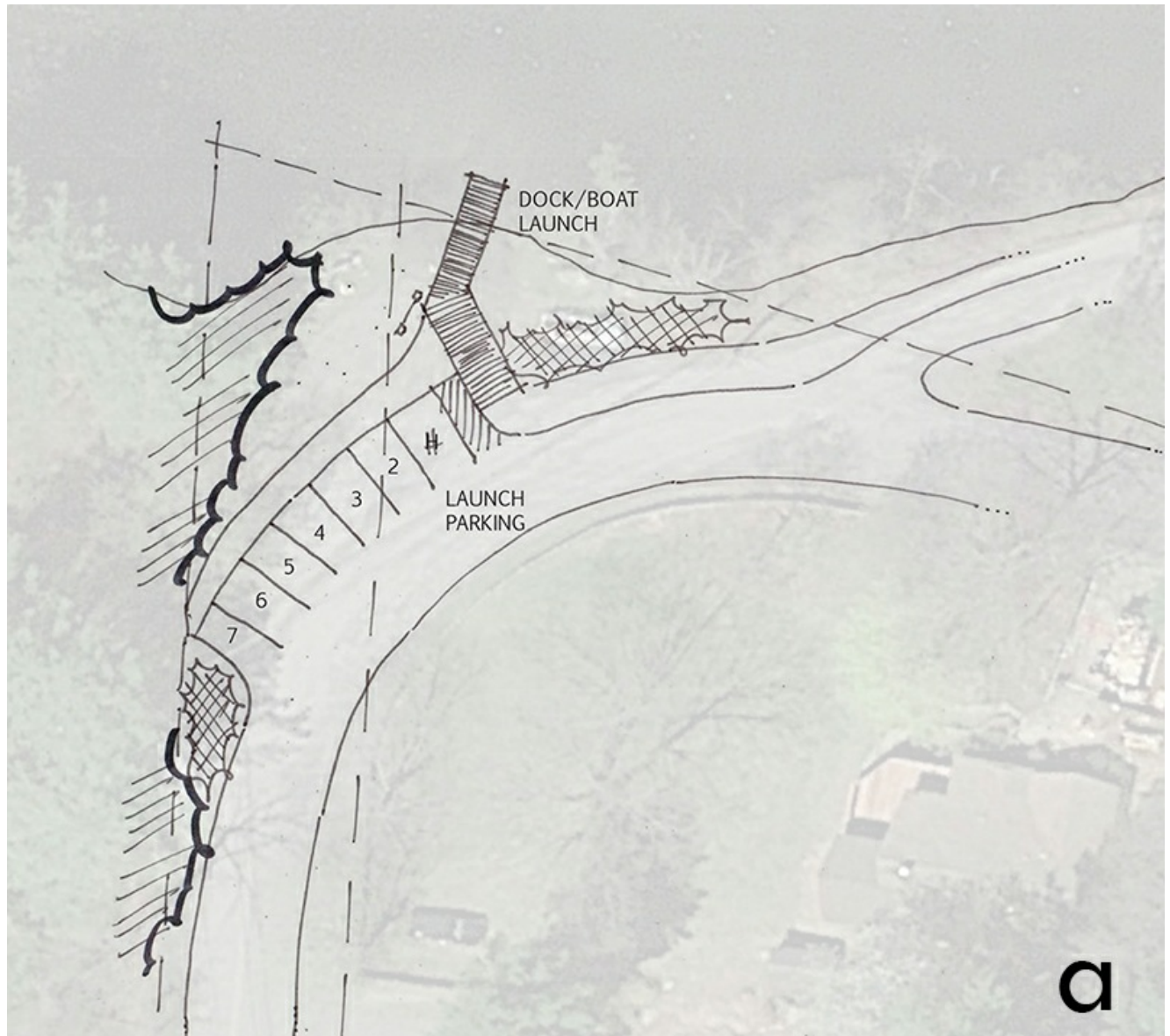
Four (4) options have been studied for the boat launch area near the intersection of Lake Mansfield Road and Knob Hill Road. Each have their own positive and negative aspects.

(Note: There is a possibility that the Massachusetts Department of Fish & Game's Office of Fishing & Boating Access may provide design and construction services for improvements to the boat launch. However, they require between 6-8 parking spaces for the launch.)

Existing conditions



Option A:



OPTION A:

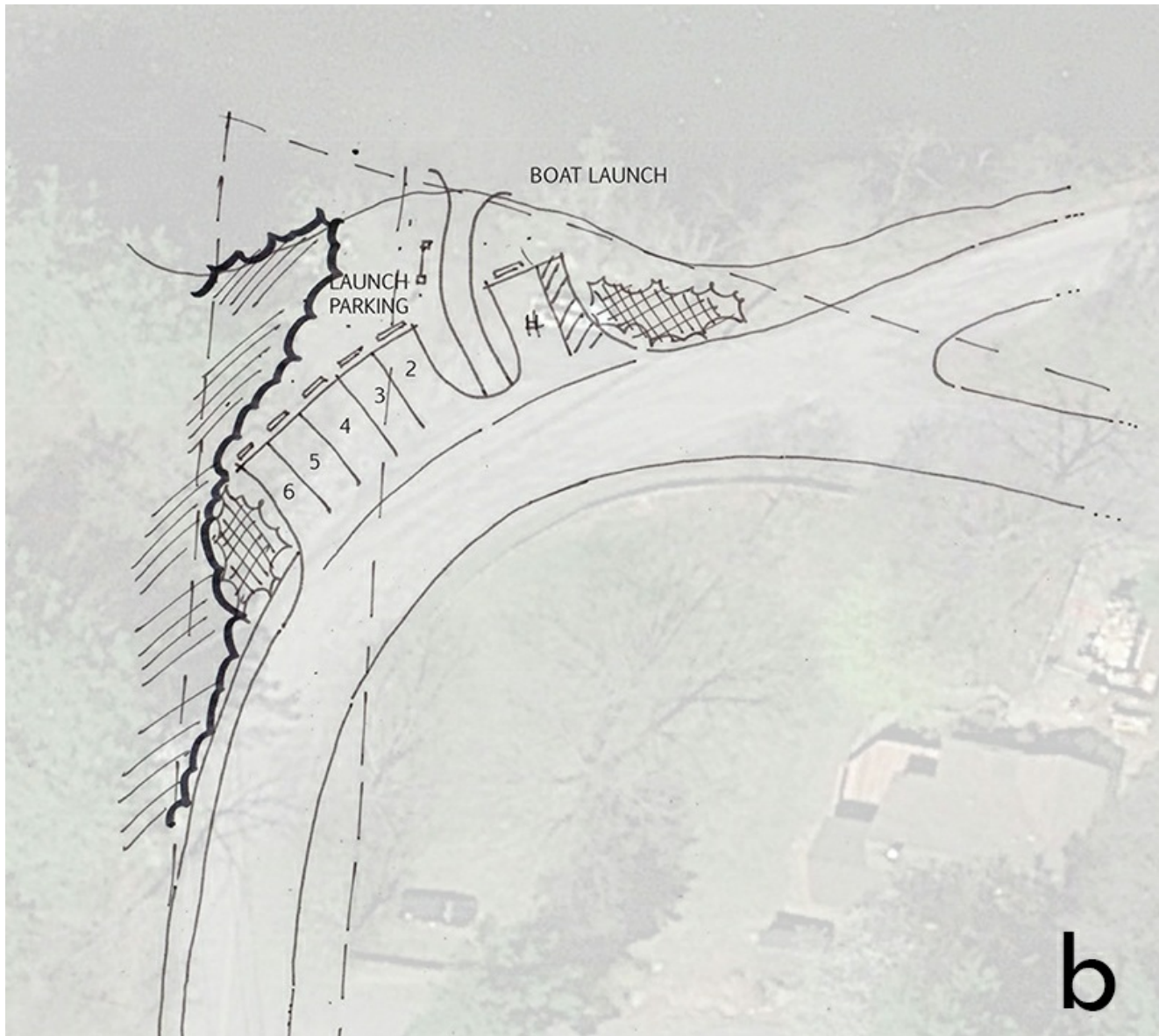
PROS:

- Creates dock (boardwalk) for boat launch
- Meets Massachusetts Department of Fish & Game's requirement for parking
- Maintains existing wooded area on west side
- Provides some usable land between parking land and lake edge
- Provides stormwater treatment areas

CONS:

- Eliminates use of trailers at launch and parking
- Requires backing into road from parking spaces

Option B:



OPTION B:

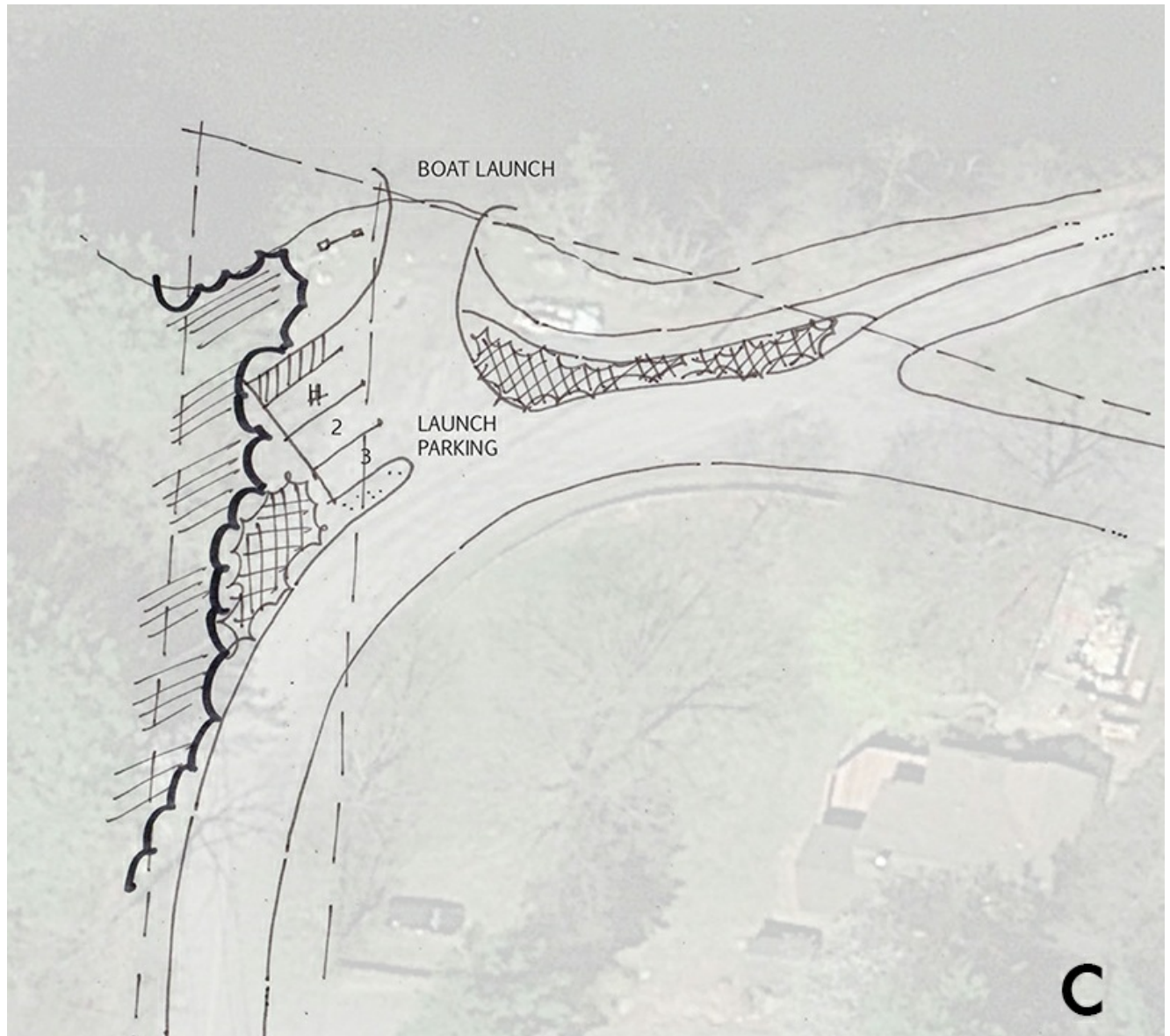
PROS:

- Meets Massachusetts Department of Fish & Game's requirement for parking
- Maintains existing wooded area on west side
- Provides some usable land between parking land and lake edge
- Provides stormwater treatment areas

CONS:

- Eliminates use of trailers at launch and parking
- Minimized boat launch
- Requires backing into road from parking spaces

Option C:



OPTION C:

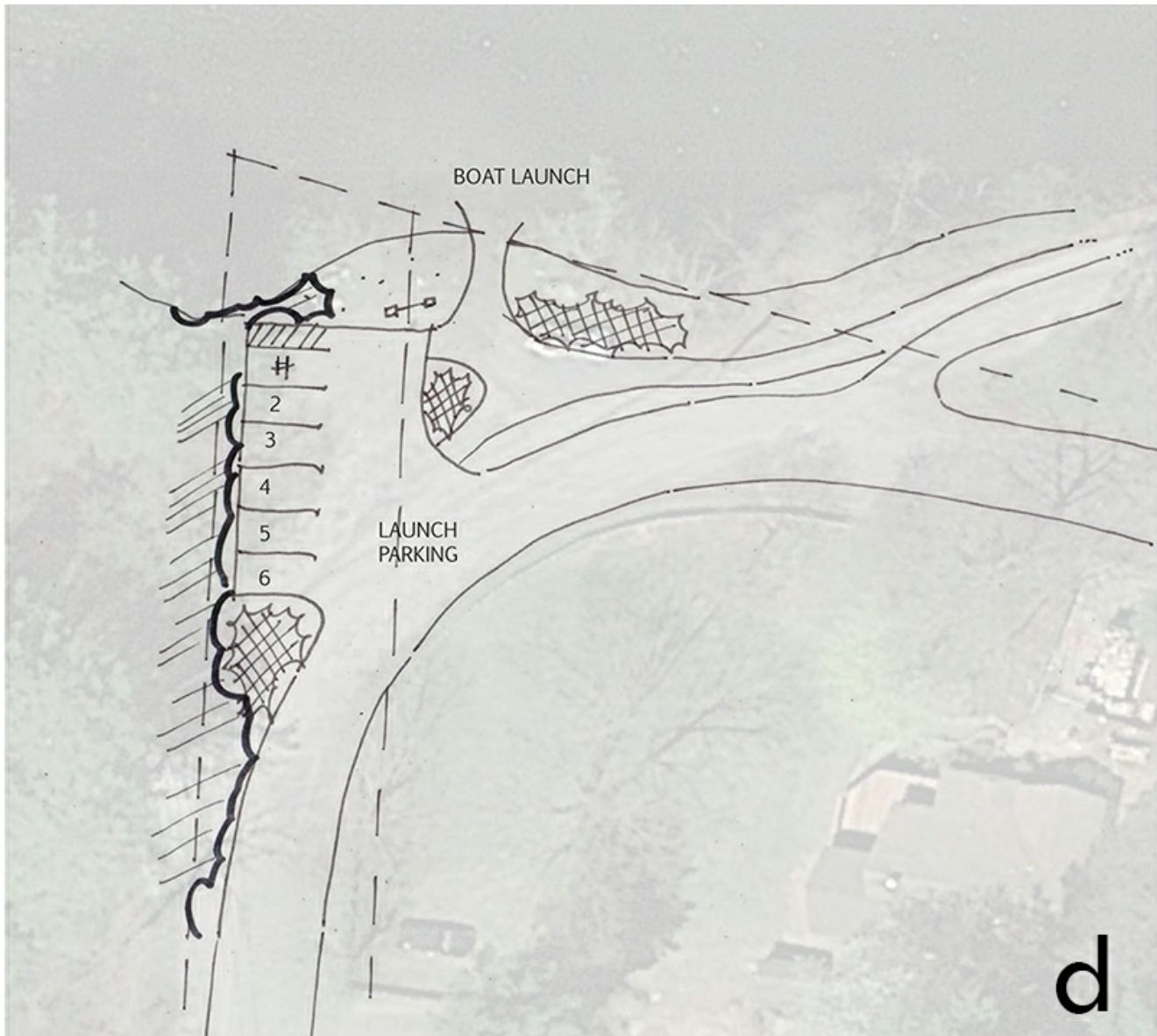
PROS:

- Allows boat launch from trailer
- Provides minimal land between parking land and lake edge
- Does not require backing into road from parking spaces
- Maintains existing wooded area on west side
- Provides stormwater treatment areas

CONS:

- Does not meet Massachusetts Department of Fish & Game's requirement for parking
- Eliminates use of trailer parking

Option D:



OPTION D:

PROS:

- Meets Massachusetts Department of Fish & Game's requirement for parking
- Provides minimal land between parking land and lake edge
- Provides stormwater treatment areas

CONS:

- Eliminates use of trailers at launch and parking
- Minimized boat launch
- Eliminates wooded area on west side
- Requires some vehicles to back into road from parking spaces

5. Which of these options for you prefer for the boat launch?

☐ Option A

☐ Option B

☐ Option C

☐ Option D

6. What was it about this option that made you select it as most preferable?



Improvements to the Lake Mansfield Recreation Area Public Survey #2

Recreation Area

In determining if the beach and park area of Lake Mansfield should be modified in size, we would like to know: of the following images of the beach at Lake Mansfield, which do you think is the most appropriate level of use for Lake Mansfield beach and swim area?

Option A.



Option B:



Option C.



*** 7. Which of these images do you think is the most appropriate level of use for Lake Mansfield beach and swim area?**

- ☐ Option A
- ☐ Option B
- ☐ Option C

8. What was it about this option that made you select it as most preferable?



Improvements to the Lake Mansfield Recreation Area Public Survey #2

Thank you for your input

We intend to use the information that you have provided us to move further into the development of a master plan for the Lake Mansfield Recreation area. At the next public forum, we will present refined designs with cost estimates for additional feedback. Thank you!

Lake Mansfield Improvement
Public Input Survey #2

Results as of 22 February 2016 (220 responses) – Survey ran from 1/14/2016 through 2/22/2016

Q1. Which of these four options do you prefer for Lake Mansfield Road?

A. Leave it as it is	19.8%
B. Maintain as a two-way road, but widen to 22-feet	18.4%
C. Narrow to a one-way road	33.5%
D. Close the road	28.3%
(212 answered/8 skipped = 96%)	

Q2:

Reasons for selecting A:

- Works the way it is – 9
“I like it the way it is, funky et al. Go slowly, maybe undertake option C in a year or two.”
- Least cost – 7
- Needs to be two-way, but additional changes seem unnecessary – 3
“Only needed change is to repave the road”
“Extensive improvements change the character of a quiet little treasure into an ‘attraction’ that will change the character of the neighborhood”
“Really needs to be fixed, but not just for 5 years”
- Not too disruptive – 2
- Don’t want increased traffic on surrounding roads (Dehon Rd/Christian Hill Rd) – 2
- Wider road means faster traffic – 2
“Just add speed bumps”
“This is the best option as it is too disruptive to close the road, or make it one way. The best option would be to add some plastic speed bumps during the spring through fall seasons.”
“I fear road improvements may contribute to speeding.”
- “Least ridiculous”
- “Vehicles are already driven slowly and cautiously due to narrowness of the road. Drivers are considerate of other vehicles, bicyclists and pedestrians”
- Allows entire town to enjoy the lake, not just the neighbors
- “By “leave as is” what I mean is that 2-way is preferred, and doable. As a “shared street” it works great. Where stormwater improvements are needed and buffer on the lake side is needed, these could act as “choke points” that further reduce traffic speed. A shared street would provide max. Flexibility for users, but would FORCE cars to go slower.”
- Expands opportunities for safe use of LM as a recreation area while reducing heavy traffic
- Total daily traffic is not overwhelming
- Accessibility to the beach
- “Close the road to heavy traffic”
- One-way or closed road would be inconvenient (lives on Knob Hill Road)

Reasons for selecting B:

- Two-way is important – 10
“2-way road needed for emergencies in both directions” – (2)
- Access/safety – 5
“With the boardwalk, this is by far the best option for vehicular and pedestrian travel. Safety, lake quality and parking are all improved.”
- Critical north-south access – 3
“I often take this way to work so I can stop by the lake for a few minutes of peace.”
“It seems to create a more permanent roadway while still leaving access out of the hill.”
- Meets the needs of most people
“Improved accessibility to the lake for all residents”
- Long-term investment
- Improves the current road condition

Reasons for selecting C:

- Meets the broadest needs of the community (maintains access but provides recreation) – 26
“Access beach by car for handicap and picnicking, young children etc.”
“Lake Mansfield would become a real destination for people seeking natural experience, and nice combination with our downtown experience, and an antidote to the car culture we live in.”
“I like the idea of closing the road altogether, but think it will cause parking problems at Knob Hill Rd.”
“I enjoy driving by the lake to my house on Christian Hill Rd – now and then. I don't like the idea of widening the road-- it will encourage more traffic and faster driving.”
- Safety with separate pedestrian/bike lane – 21
“Creates a beautiful safe park”
“Creates a linear park”
- Most environmentally sound – 19
“Allows restoration of lake edge and wildlife habitat”
“Prioritized lake health and buffer zone”
- Less/slower traffic – 12
- Cost savings/efficiency – 5
“Max bang for the buck”
- Most attractive – 3
“Preserves a special feel and status for the lake rather than just being a view for driving through.”
- Boardwalk – 2
- Prevents congestion at boat launch
- Does not require turnaround at boat launch
- Consider as a first phase ahead of closing the road
- Not a huge inconvenience
- Optimizes recreation opportunities
- Added home construction increases need of access
- Ease of access for both cars and people
- Eliminate through road
- Maintains a quieter road
- Creates accessibility for those that can only get to park by car

- “Simultaneously enhances safety , buffer zone, accessibility for those who can get to park only by car; increases habitat; closing road still necessitates some kind of paving which could be employed for one way option”

Reasons for selecting D:

- Ecological benefits/better for the lake & habitat – 24
“Promotes native restoration of lake edge”
“There never should have been a road here in the first place. Need to take the opportunity to reclaim our valuable lake.” – 3
“Preserves the lake as a town park, not just a drive by eutrophying pond”
- Safest – 22
“I travel the road every day on foot. It is dangerous even in the winter when there is less traffic. When the weather is warmer, there are many children on the road on bicycles. ... There is no way for a car to avoid a pedestrian if needed.”
“No traffic in the area used for recreation. Safer for everyone - those fishing, walking, and biking. More like a true recreational area. Will no longer be used as a shortcut.”
- Need for pedestrian space/linear parkway – 11
“Excited for the greater recreation area. Safer for kids walking and biking.”
- Creates a true park/destination – 5
“Park like setting. Maintain the beautiful country setting.”
- Through traffic is unnecessary – 5
“Best to discourage it to be used as a thoroughfare”
- Least expensive – 4
- Aesthetics – 4
- Creates recreation spaces/opportunity – 3
- Road is much too close to lake – 2
- More quiet space – 2
- Eliminates/slows traffic – 2
- Least disruptive
- “Doesn’t cater to economic RE interests”
- More private
- Boardwalk

None of the above

- Keep road and parking as is – 4
“If it ain’t broke...”
- “Why not leave the road and better define parking where it is?”
- “I am not sure the parking actually needs to be improved. We live in the area and even at the height of the summer season have never noticed more cars than the lot could accommodate.”
- “I prefer to close the road and leave Parking and Beach Front the same. Less money for taxpayers. No road to cross. Emergency vehicles have proper road to travel.”
- “Here’s how I would answer if you let me. Leave the road alone. Shore up the shore to stop further erosion. Paint a double yellow line down the middle which will imply people have to stay in lane and that will slow them down. Do as little to the parking area as possible that will allow you to add as many spaces as possible. Define the spaces at the boat launch to fit a few more cars

there but have at least one space where someone can leave a trailer. I've seen 3 or 4 cars there. Room for 5 or 6 would be fine but keep it simple."

General comments:

- "Was the option of using a boardwalk for pedestrians over the water ever discussed? That plus a two way road with speed tamping devices would be ideal!"
- "If the road is closed, people will just park at the boat launch and walk to the beach or use it for their starting place for walking, biking, etc. This will severely limit access to those wanting to use the boat launch for its intended use..... Launching boats. There also needs to be enough room for people with watercraft to get them on an off their vehicles and get them to the water. I also really hate the idea of a dock or pier at the launch area. The comment about swimmers using it to enter the lake may lead to serious injury if some kid dives into the shallow lake."
- "One of my big concerns is to feel safe when walking along the road to the beach front from the south side. The great pictures you showed of a walkway last night at the meeting were not shown in the options. I hope that they are included in the option of a two-way road."
- Request for stop signs at intersection of Hollenbeck & Lake Mansfield Road, and Castle Hill Avenue and Hollenbeck
- Need more parking
- "I do feel strongly that the road remain open and a road first (before a parking area). Parking should be limited before traffic."
- "In addition to [option B], I have always thought that a good solution would be to create a sort of Boardwalk or meandering deck above water running alongside the road. This would be for pedestrian use, walking, fishing, etc. it would be a wonderful way to be involved with the natural surroundings on the lake and the lakes edge, and would. It interfere with the road, which would then be for driving."
- "Widening / or improving the road will always be a patch - it's too small a roadway for a "modern" roadway. It only gets used as a cut through at high speeds / there are other better options. Keep it possible as a bike able passage though - very important to add to the bike infrastructure - the more we have, the more people will use bikes as transportation."

Overall response priorities for all options (ranked in order of most common to least):

1. Safety – 48 (out of 212)
2. Ecological benefits/better for the lake & habitat – 43
3. Meets the broadest needs of the community – 28
4. Cost savings/efficiency – 17
4. Less/slower traffic – 17
5. Needs to be two-way – 14
6. Need for pedestrian space/linear parkway – 11
6. Works the way it is – 11
7. Convenience/disruption – 8
8. Most attractive – 7
9. Through traffic is unnecessary – 6
10. Creates a true park/destination – 5
10. Creates recreation spaces/opportunity – 5

- 10. Boardwalk – 5
- 11. Access – 4
- 12. Don't want increased traffic on surrounding roads – 2
- 12. Road is much too close to lake – 2
- 12. More quiet space – 2
- 12. Improves road condition – 2

Q3. Which of these options do you prefer for the recreation area parking?

- | | |
|--|-------|
| A. Perpendicular parking with spaces on beach side | 19.1% |
| B. Perpendicular parking with drop-off on beach side | 24.2% |
| C. Angled parking with one-way access (narrow) | 25.5% |
| D. Traditional parking | 31.2% |
- (157 answered/63 skipped = 71.3%)

Q4. What was it about this option that made you select it as most preferable?

Reasons for selecting A:

- Direct parking to beach/no crossing road – 5
- Through drivers stay away from beach
- Safety
- Least work/expense
- Moves parking away from beach
- Least intrusive
- Most attractive
- Emergency vehicles
- Traffic flow
- Provides greatest benefits with least negatives
- Still needs more parking
- Creates new passive recreation opportunities

Reasons for selecting B:

- Parking is not right next to beach – 13
 “Keep parking away from beach to preserve the beauty of the lake.”
 “Keeps cars away from beach - don't want idling cars beside beach and have it become a
 “lovers/drug-taking overlook” as people still in their cars and “look” out at beach”
 “Cars don't park facing the water (which is creepy)”
- Expanded passive recreation space – 10
- View is not blocked by cars – 5
 “The first impression of the lake should be nature, not cars”
- Drop-off/allows for not crossing road – 4
- Less impact – 3
- Two-way traffic option – 2
- Slows traffic through beach area – 2

- Crossing the road is a non-issue – 2
- Easiest for cars to get to pool club
- Most community-minded option
- Dedicated parking for trails
- Makes the most sense
- Impact on Conservation forest is a concern
- Good pedestrian orientation to all amenities
- Accessibility
- Provides stormwater treatment

Reasons for selecting C:

- Minimal impact on forest & trail system – 16
- Safest/No need to cross road/direct access to beach – 9
- Minimized traffic volume/speed – 4
- Best balance – 3
- One-way parking – 3
- Environmentally sound – 2
- View from south is not parking – 2
- Proximity of parking to beach – 2
- Gets the cars away from the beach
- Promotes more tranquil experience at the beach
- Prevents congestion at boat launch
- Maintains long view from approach
- Minimized area of parking
- Appears to have the most parking
- Best use of space
- “Greater recreational use for walking and biking”
- Keeps road narrow
- “The idea that we need passive recreation near where we park is stupid. Don't waste limited space. Keep it functional for through traffic and parking.”

Reasons for selecting D:

- No crossing the road to beach – 7
- Better traffic flow – 6
- Creates a larger recreation area – 6
“Great landscaping possibilities & its ok to lose a little of the 'wild area' for parking (i wouldn't normally say that, but here it seems a better solution”
- Safety – 5
- Appears to have the most parking spaces which is needed – 3
- Allows treatment of stormwater – 2
- Creates a buffer between parking & vehicular circulation and the lake (only if it accommodates 2-way traffic) – 2
- Needs more parking
- Easiest parking
- Seems sensible

- No traffic by beach
- “Doesn’t cater to selfish RE interests”
- Preserves area best
- Like it except for impact of green area
- More park-like
- Removes traffic flow from parking
- Overflow areas
- Slows traffic
- Best all-around solution

None of the above:

- Clean up lot, add lines and see if there is room for parking along road where people park now.
- Leave it as it is
- Like the overflow parking idea
- “Clean up lot, add lines and see if there is room for parking along road where people park now.”

General comments:

- Want whichever parking option creates the most parking for the least money
- “Can tree areas in parking provides seating?”
- “The key is to provide enough parking to handle almost the heaviest day of the year. You don’t want to plan for too much parking, or on the other hand too little.”

Overall response priorities for all options (ranked in order of most common to least):

1. Direct parking to beach/no crossing road – 25 (out of 157)
2. Minimal impact on forest & trail system – 24
3. Parking is not right next to beach – 19
4. Expanded passive recreation space – 17
5. View is not blocked by cars – 8
5. Better traffic flow – 8
6. Safety – 6
7. Minimized traffic volume/speed – 5
8. Balance between improvements/natural resources – 4
9. Slows/reduces traffic through beach area – 3
9. One-way traffic in parking – 3
9. Appears to have the most parking spaces which is needed – 3
10. Allows treatment of stormwater – 3
11. Crossing the road from parking is a non-issue – 2
11. Maintaining two-way traffic – 2
11. Environmentally sound – 2
11. Still not enough parking – 2

Q5. Which of these options do you prefer for the boat launch?

- | | |
|--------------------------------------|-------|
| A. Pull-off with dock | 28.2% |
| B. Split pull-off | 18.6% |
| C. Three off-street spaces | 26.3% |
| D. Six off-street spaces along woods | 26.9% |
- (156 answered/64 skipped = 70.9%)

Q6. What was it about this option that made you select it as most preferable?

Reasons for selecting A:

- Creates dock – 26
“More park users can enjoy the dock, not just boaters.”
- Provides spaces required for state funding – 7
- Don’t need trailer access – 5
- Maintains wooded area – 3
- Provides more usable space – 2
- Most benefits with fewest negatives
“I don’t think boats that require a trailer to get there should be used in the lake. Keep it kayak, canoe, and paddleboat friendly.”
- Keeps beach area open
- Simple design
- Easy parking (backing in)
- Least disruptive
- “provides room for benches”
- Where do trailers park?
“I like the dock and launch area. I am concerned about where people will park their trailers. I carry my canoe on a trailer and would be tempted to park it on Hollenbeck.”
Best for boats and people

Reasons for selecting B:

- Minimal impact/preserves woodland – 5
- Eliminates trailers – 4
- Creates/maintains usable land – 3
- Dock not needed – 3
“A has a dock--for what? Do not want people fishing here as this is the place for dogs and lake swimmers”
“Adds to cost and maintenance”
- State funding opportunity – 3
- Minimized boat launch – 2
- Cars can back into spaces/easiest car access – 2
- Allows stormwater treatment
- Creates gathering space/unloading space
- Aesthetic

Reasons for selecting C:

- Allows trailer launch to stay – 10
“It keeps trailers coming...they're gonna come so might as well plan for it.”
- Safer/no backing onto road – 8
- Parking/pavement should be kept to a minimum/not an issue – 8
“Don't need 6 spaces”
- Saves wooded area – 3
- Keeps it like it is/least disruptive – 3
“Tired of the state telling us what to do” – 2
“After Main Street, I would rather do less with our money than take state money and do what they want.”
- In scale with space
- Dock is a waste of space
- User friendly

Reasons for selecting D:

- No backing onto road – 9
- Maintains open sight line for pedestrians & drivers to enjoy view of lake – 7
- Provides for state funding – 6
- Eliminates trailers – 5
- Maximum parking – 3
- Stormwater treatment area – 3
- No dock – 3
- Space for revegetation/lake edge restoration – 2
- Seems less intrusive – 2
- Looks easy to plow
- Easy access
- But like the dock
- Separates parking from launch
- Separate parking from road
- Combines parking with moderate safety
“Seems to leave more non-parking area bit still provides a lot of parking. I've never seen 6 cars there but I've seen more than 3 frequently.”
“Seems safe for people unloading kayaks and canoes from their cars.”
- Looks the best
- “Even though you are eliminating trailer access, you really need to provide a safe way for people to access rooftop racks that hold canoes and kayaks, otherwise why even have a boat launch. Option d has the most room to off-load a watercraft and get it to the water and return it to the vehicle. There also needs to be some rules for parking that give boaters preference especially if the roadway is closed to traffic, otherwise boaters will start accessing the lake at the beach area which could be a hazard to beach users.”
- Needs more beach space

None of the above:

- Leave it as it is – 2
- “I would prefer to see some aspects of each combined: 1 constructing a dock, 2 keep the ovoid shape of existing parking so that backing out is not necessary, 3 do not create lines for spaces as trailers have to be accommodated. I would also like to see an improvement of the ‘beach area’ of this launch area - Perhaps a channel out into the lake for use by swimmers would make it more welcoming and possible to actually start swimming here and also make it easier to finish the swim from the other side and walk up on land here. The channel needs to be weed free and buoyed or marked in some way.”

General responses:

- A, B or D, whichever is least expensive. But none of these plans allow trailers. What is a tax paying boater to do if he is bringing three kayaks?
- Needs bike racks
- I am not real happy about any of the options due to loss of trailer parking. D allows at least some of the parked vehicles to not have to back into traffic.
- I don't like any of these solutions. There are rarely more than a few cars parked there. None of these ideas allow for trailer parking. These options don't truly serve the community

Overall response priorities for all options (ranked in order of most common to least):

1. Creates dock – 27 (out of 156)
2. Safer/no backing onto road – 20
3. Provides spaces required for state funding – 16
4. Eliminates trailers – 14
5. Allows trailer launch to stay – 13
6. Maintains wooded area – 11
7. Maintains open sight line for pedestrians & drivers to enjoy view of lake – 7
8. Dock not needed – 6
9. Easy parking/easiest car access – 5
9. Parking/pavement should be kept to a minimum/not an issue – 5
10. Creates/maintains usable land for gathering/unloading – 4
10. Stormwater treatment area – 4
11. Keeps it like it is/least disruptive – 3
11. Maximized parking – 3
12. Provides more usable space – 2
12. Minimized boat launch – 2
12. Don't want state telling us what to do – 2
12. Space for revegetation/lake edge restoration – 2
12. Need more beach space – 2
12. Least expensive – 2
12. Needs amenities (bike racks, benches, etc.) – 2

Q7. Which of these is most appropriate for the beach area?

- | | |
|-----------------------------------|-------|
| A. Moderate | 59.9% |
| B. Empty | 09.9% |
| C. Crowded | 30.2% |
| (182 answered/38 skipped = 82.7%) | |

Q8. What was it about this option that made you select it as most preferable?

Reasons for selecting A:

- Balanced and appropriate ratio of people to space – 25
 “About as many people as the beach can support without making it unpleasantly crowded.”
 “Beware of summer camps bringing their campers and overwhelming the place.”
 “Moderate use, keeps it safer and cleaner, probably adequate parking, on average this is best, on really hot days I'd expect higher usage but that's also when water quality goes down, so balancing all seems prudent to go with A”
 “Pond is too small to attract or support heavy recreation”
 “Most communal, yet relaxing”
- Community space, not too crowded – 11
 “Not private beach (like B) or Jersey Shore (like C)”
- This is the most accurate/realistic – 7
- Gets too crowded – 3
- Only maxed out a few days a year; fewer cars is better for everyone – 2
 “Doesn't require expansion of parking “
- Busy and well-used
- Access to the lake should not be restricted
- Doesn't develop the park for peak use
- Less people = less traffic = less impact
- Safety
- Open space between users
- Beach does not need to be enlarged
- Expand swimming area/eliminate weeds

Reasons for selecting B:

- Should remain a quiet asset to residents of GB – 2
 “The lake is small. We should not be trying to attract more people.”
- Small swim area – 2
- Not crowded – 2
 “I don't want to see it turn in to a major beach attraction drawing people from other communities. The lake is situated right in the midst of a totally residential area.”
 “This one is a tough call - fewer is better but on a hot day, all are welcome!”
- Lots of people should be able to enjoy it w/o feeling overcrowded

Reasons for selecting C:

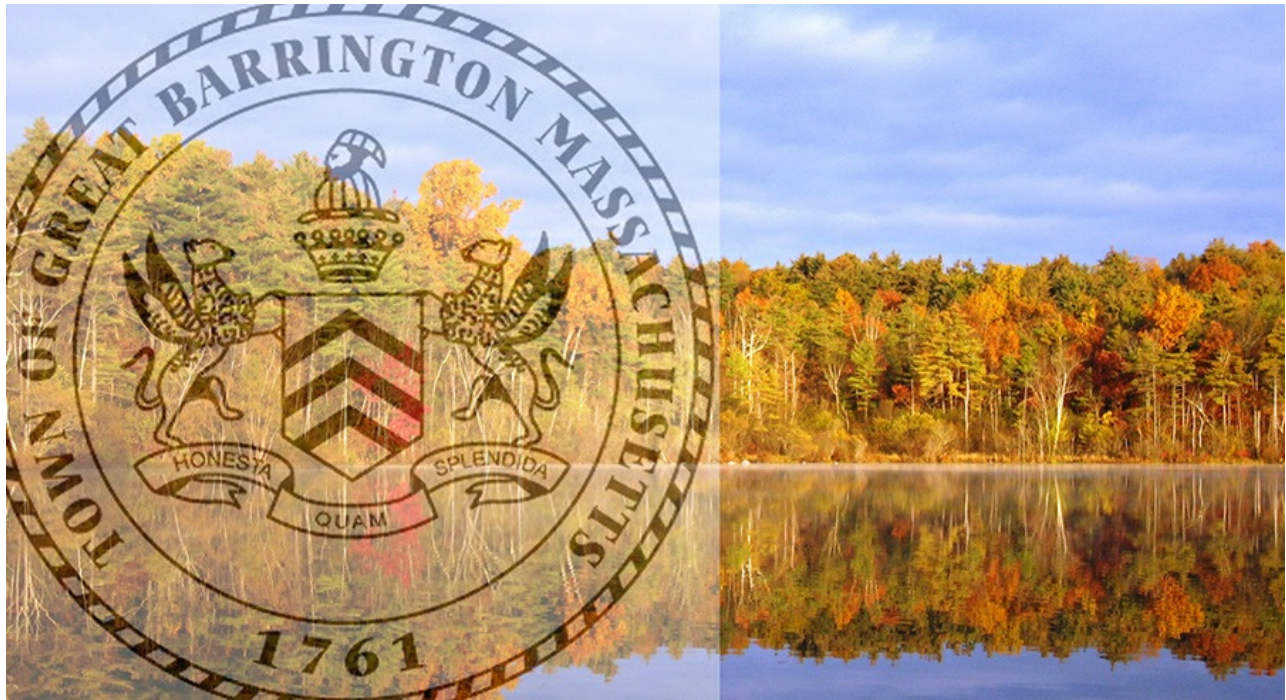
- Accommodates larger numbers of people – 11
 “Well-used by all ages”
 “Lots of people having fun but still plenty of room”
 “The beach area should be able to accommodate the people in this picture”
 “Shouldn’t limit use by parking”
 “Most access to swimming at lake”
 “It’s a community gathering place in town...so town density is preferred. If you want solitude, there are tons of other places to go / this is a rare place where one can meet many of ones neighbors and acquaintances; it should be encouraged.”
- It is a community resource, not a private beach - 7
 “i want the beach to accommodate as many people as want to use it”
- Wonderful place for families/crowded is fun – 2
- Most realistic
- Can’t be any smaller
- Best reason to live in town
- This only happens occasionally and it’s still not that busy
 “This is the only public beach in gt barrington. It will look like this regardless of what we improve”
- It’s an in-town park
- Not enough parking for the number of people shown
- Openness of the area

General comments:

- “The lake is for residents to enjoy safely no matter how many show up on a given day. I prefer when the swimming area is quieter, but I think all three photos show an appropriate level of use for this resource.”

Overall response priorities for all options (ranked in order of most common to least):

1. Balanced and appropriate ratio of people to space – 25 (out of 182)
2. it is a community resource, not a private beach – 19
3. wonderful place for families/crowded is fun – 15
4. This is the most accurate/realistic – 8
5. Gets too crowded – 5
6. Only maxed out a few days a year; fewer cars is better for everyone – 4
7. Should remain a quiet asset to residents of GB – 3
7. Small swim area – 3
8. Beach should not be any smaller – 2



Improvements to the Lake Mansfield Recreation Area Public Input Survey #3

Welcome to our 3rd community survey for the Improvements to the Lake Mansfield Recreation Area

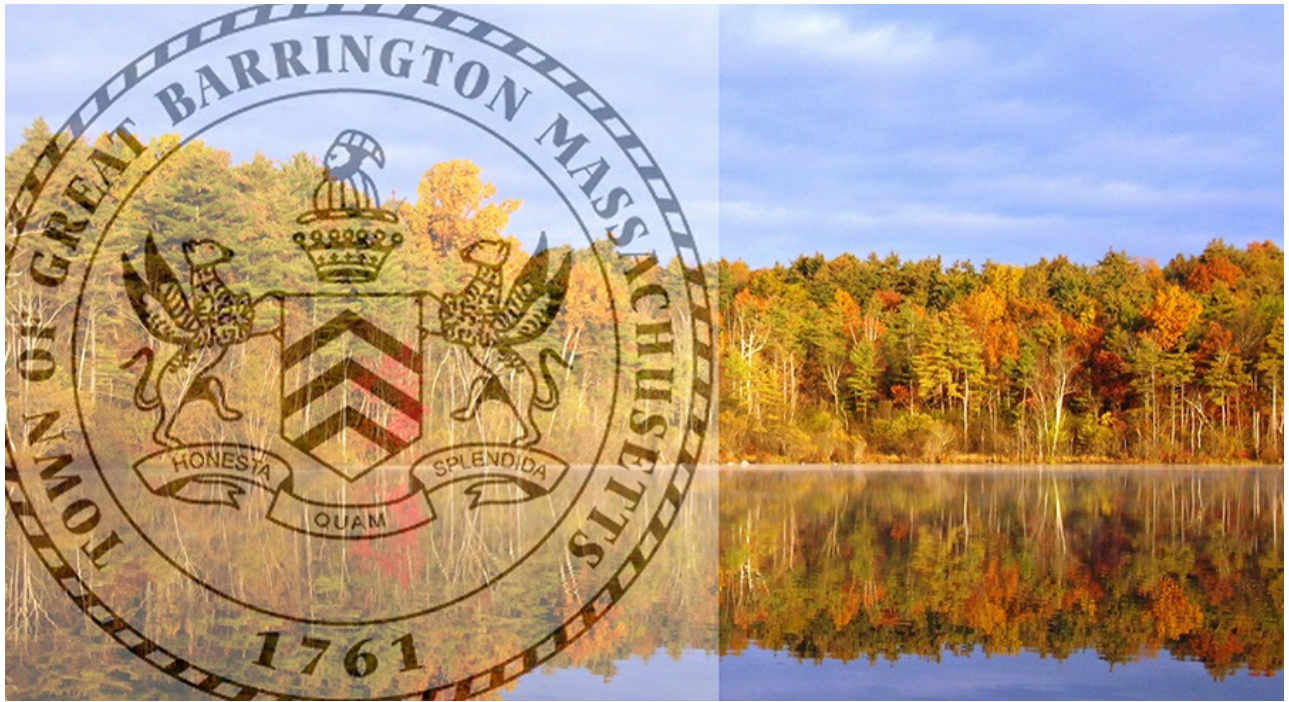
After a decade of cleanup and restoration efforts by the Lake Mansfield Improvement Task Force and the Lake Mansfield Alliance, the lake is a popular year-round recreational retreat for the entire town of Great Barrington, Massachusetts. The Lake Mansfield Improvements project will:

- Develop a comprehensive plan for implementation of improvements
- Illustrate the improvement options
- Identify all environmental and permitting requirements related to each improvement
- Recommend a phasing/sequencing plan and schedule for improvements including permitting
- Develop estimated costs for design, permitting, and construction

As a part of the planning process, the Lake Mansfield Improvement Task Force has held a series of public forums to gain input from the community. The final meeting was held on Wednesday, March 2nd at the Great Barrington Fire Station. At that meeting there was further review and discussion of design alternatives for Lake Mansfield Road, the recreation area parking, and the boat launch. The various design alternatives were evaluated in terms of their costs, impact to lake water quality, safety, access, permitting, and potential funding opportunities.

The overarching goals for Lake Mansfield Recreation Area Improvements include:

- Restore natural habitat and vegetated buffer zone where the shoreline has eroded away.
- Redesign beach/forest area parking to improve stormwater management/sediment control & pedestrian access to the lake and play/picnic area.
- Improve lake outlet control structure to alleviate flooding issues at northern end of the lake
- Redesign boat launch to reduce erosion & lake sedimentation and improve parking layout
- Improve stormwater management on Knob Hill Road to reduce erosion and lake sedimentation



Improvements to the Lake Mansfield Recreation Area Public Input Survey #3

Where do you live?

*** 1. Where do you live?**

- ☐ I am a resident of Great Barrington.
- ☐ I am not a resident of Great Barrington.

2. If a resident, what street do you live on? (Street number not required)






3. If not a resident, where do you live? (Town or city and state only)

Improvements to the Lake Mansfield Recreation Area Public Input Survey #3

Use & Priorities

* 4. How do you use the Lake Mansfield Conservation Recreation Area?

* 5. Please prioritize importance of the following goals for Lake Mansfield: (Please rank with one as the most important and five as the least important.)

	<input type="text"/>	Improve and enhance water quality for humans and wildlife
	<input type="text"/>	Improve lake health and restore shoreline habitat for plants and animals
	<input type="text"/>	Ensure the safety for recreational users (cyclists, walkers, people fishing, animals, etc.)
	<input type="text"/>	Improve pedestrian access and accessibility
	<input type="text"/>	Maintain two-way vehicular access

6. Do you have a priority other than what is included above? Please tell us what it is?

7. If you included an additional priority, how would you rank its importance?

Improvements to the Lake Mansfield Recreation Area Public Input Survey #3

Lake Mansfield Road Improvements

Described below are the three most viable long-term options considered for the Lake Mansfield Recreation Area. Please review these options fully before answering the question that follows.

Please note:

Extensive research has gone into developing these alternatives, all of which balance a number of town goals for Lake Mansfield. Additional options were considered:

- Fully rebuilding and widening the road to meet state standards is not considered a feasible option considering the extensive wetland and other environmental constraints and the need to restore the shoreline.
- Patching or re-milling the existing road is considered a temporary fix at best, that will only last approximately three to five years. Full reconstruction of the existing road (including base material) would likely be required before 2020.
- A boardwalk has been considered as part of various options to provide a separate pedestrian path and fishing opportunities. Because of the additional cost/permitting and in order not to confuse the options, this component has been left out at this time, although it could be added to options A (narrowed, two-way road) and B (one-way road).

Option A: Narrowed, Two-Way Road (Multi-use for pedestrians, bikes, and vehicles):



Narrowed, Two-Way Road (Multi-use for pedestrians, bikes, and vehicles):

- Proposed 16 to 18-foot roadbed for two-way multi-use, park-like road.
- Traffic calming measures to slow and reduce two-way travel.
- Allows for shoreline restoration and revegetation. Improves lake health.
- May allow for small shoreline recreational sites to be created along road.
- Funding options may include grants and Chapter 90 allocation.

Option B: One-Way Road (Boat Launch to Beach) + Shoreline Recreation Trail:



One-Way Road (Boat Launch to Beach) + Shoreline Recreation Trail:

- Proposed 12-foot wide south-to-north vehicle lane between the boat launch and the beach parking area.
- Beach area approached from north or south/Boat launch access from south only.
- 6 to 8-foot dedicated recreation trail/corridor for pedestrians, cyclists, people fishing, etc.
- Allows for full shoreline restoration and revegetation. Improves lake health.
- Allows for small shoreline recreational sites to be created along road.
- Additional grant opportunities because of recreational component.

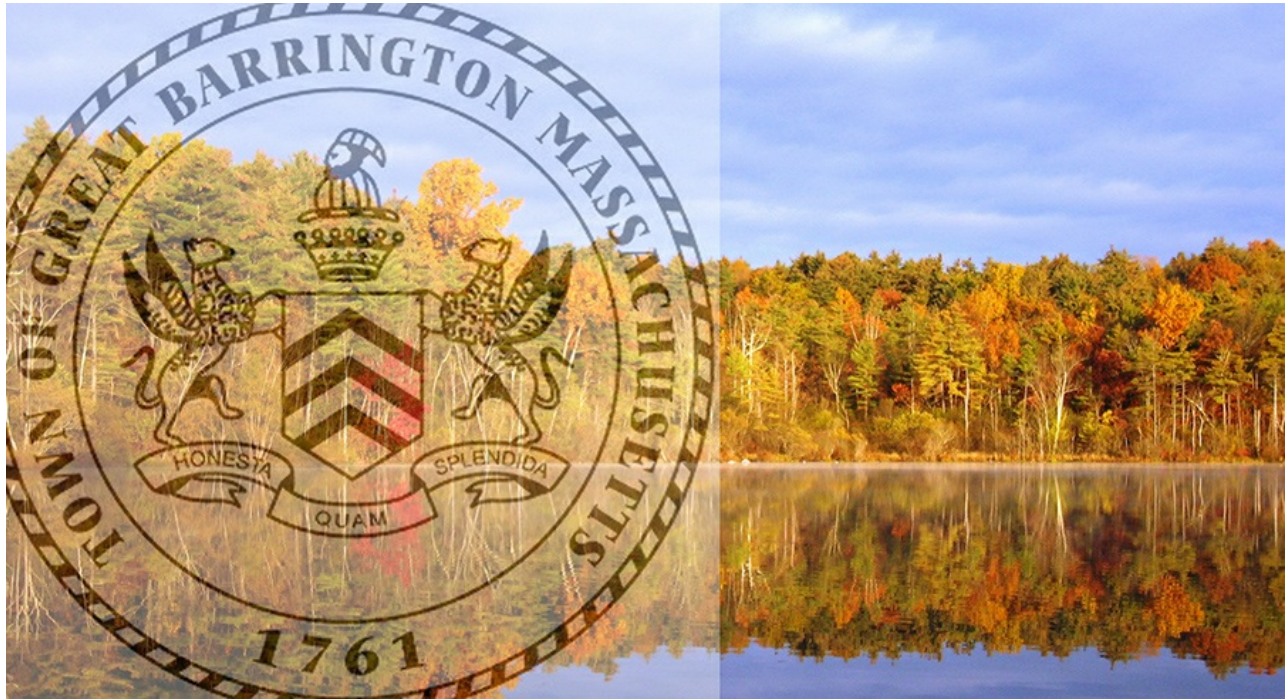
Option C: Closed Road/Shoreline Recreation Trail (Boat Launch to Beach):



Closed Road/Shoreline Recreation Trail (Boat Launch to Beach):

- Single lane roadbed maintained for emergency vehicle access only.
- Beach area access from north only/Boat launch access from south only.
- Dedicated space allows maximum opportunity recreation (walking/biking corridor, fishing areas, etc.) along lake shore.
- Allows for full shoreline restoration and revegetation. Improves lake health.
- Additional grant opportunities because of recreational component.

*** 8. Based on the information provided above, which of the viable options do you most prefer?**



Improvements to the Lake Mansfield Recreation Area Public Input Survey #3

Improvement Costs

*** 9. How important is construction cost in your consideration of the options (taking into account that the Town will be submitting proposals for grants to help fund any of the work to be undertaken)?**

- ☐ Minimizing cost should be the primary deciding factor at Lake Mansfield
- ☐ I am concerned about costs, but I want to see natural resources/ recreation opportunities improved at Lake Mansfield
- ☐ Regardless of cost, improvements must be undertaken to enhance lake health, roadway safety, and recreational opportunities.

Other (please specify)

**Lake Mansfield Improvement
Public Input Survey #3**

- Results as of 25 April 2016 (334 responses) – Survey ran from 1/14/2016 through 3/25/2016 by Task Force

*Asterisks denoted questions where responses were required

***Q1. Where do you live?**

334 respondents answered/0 skipped question

- I am a resident of Great Barrington. 88.62%
- I am not a resident of Great Barrington. 11.38%

Q2. If a resident, what street do you live on? (Street number not required)

294 respondents answered/40 skipped question

- See spreadsheet at end of survey

Q3. If not a resident, where do you live? (Town or city and state only)

33 respondents answered/297 skipped question

- See list at end of survey

***Q4. How do you use the Lake Mansfield Conservation Recreation Area?**

302 respondents answered/32 skipped question

- Primarily as an open space with recreation opportunities and natural resources to enjoy 44.37%
- Fairly equally for travel and recreation 38.08%
- Primarily as a vehicular route for neighborhood connections and/or a bypass of Main Street 17.55%

***Q5. Please prioritize importance of the following goals for Lake Mansfield: (Please rank with one as the most important and five as the least important.)**

302 respondents answered/32 skipped question

- Improve and enhance water quality for humans and wildlife
Most popular rank: #2: (Ranking score: 3.32)
 Ranked #1: 18.87%
 Ranked #2: 29.14%
 Ranked #3: 25.83%
 Ranked #4: 17.88%
 Ranked #5: 08.28%
- Improve lake health and restore shoreline habitat for plants and animals
Most popular response: #2 (Ranking score: 3.34)
 Ranked #1: 23.51%
 Ranked #2: 26.16%
 Ranked #3: 21.52%
 Ranked #4: 18.87%
 Ranked #5: 9.93%
- Ensure the safety for recreational users (cyclists, walkers, people fishing, animals, etc.)

Most popular response: #3 (Ranking score: 3.35)

Ranked #1: 24.17%
 Ranked #2: 20.20%
 Ranked #3: 29.14%
 Ranked #4: 19.87%
 Ranked #5: 06.62%

- Improve pedestrian access and accessibility

Most popular response: #4 (Ranking score: 2.59)

Ranked #1: 08.61%
 Ranked #2: 16.56%
 Ranked #3: 17.88%
 Ranked #4: 39.40%
 Ranked #5: 17.55%

- Maintain two-way vehicular access

Most popular response: #5 (Ranking score: 2.38)

Ranked #1: 24.83%
 Ranked #2: 07.95%
 Ranked #3: 05.63%
 Ranked #4: 03.97%
 Ranked #5: 57.62%

Q6. Do you have a priority other than what is included above? Please tell us what it is?

114 respondents answered/219 skipped question

Access comments

- One-way vehicle usage – easy & safe w/ pedestrian access – 10
- Closed road/recreation route with emergency vehicle access only – 9
- Keep two-way traffic – 7
- Repaired & upgraded road leads to good water quality – 5
- No two-way – 4
- Eliminate large vehicles – 4
- Easy access from parking lot to beach – 3
- Seasonal closures – 2
- Expand parking at beach area – 2
- Need access to Eastview pool
- No cars should be located by the lakeside
- Create an alternative route for emergency
- Do not negatively impact surrounding neighborhood
- Handicap access from parking lot necessary
- Limit on-road parking
- Pedestrian/bike safety on road
- Road should not be widened
- Maintain adequate parking for beach
- Do not increase traffic to north end of lake
- Return road to dirt

Environmental comments

- Cut vegetation along roadside to improve safety – 2
- Establish a balanced ecosystem for all/consider the whole ecosystem, not just humans – 2
- Improving water quality and shoreline health are of equal importance
- Limit construction & clear cutting on lake shore

- Celebrate natural habitat
- No more tree removal/do not pave parking area
- Keep beach clean
- Consider animal migration patterns if adding new roads
- Protect the quiet/country character

Additional amenities

- Improve/enlarge beach area – 3
- Improve boat ramp – 3
- Boardwalk to separate vehicles & recreation users &/or safe place for fishing – 3
- A good town playground – 2
- More space for community gatherings/events – 2
- Do not want a boardwalk/dock – 2
- Boat storage/kayak or boat rentals – 2
- Space for dogs & dog-walkers – 2
- Benches along lake pathway
- More picnic tables

Miscellaneous

- Make it affordable/save money – 2
- Charge for out-of-state users
- Keep it open to out-of-towners
- Some people don't use the lake
- Improve scenery by reducing nose & visibility of road
- Maintain lake as free & open resource to the community & treasured resources – 6
- Maintain character of neighborhood
- Maintain scenic quality of area
- Make a state park
- Maintain the beauty as it is now

Q7. If you included an additional priority, how would you rank its importance?

89 respondents answered/245 skipped question

- Very important 83.15%
- Somewhat important 13.48%
- Slightly important 03.37%

Lake Mansfield Road Improvements

Described below are the three most viable long-term options considered for the Lake Mansfield Recreation Area. Please review these options fully before answering the question that follows.

Please note:

Extensive research has gone into developing these alternatives, all of which balance a number of town goals for Lake Mansfield. Additional options were considered:

- ☐ Fully rebuilding and widening the road to meet state standards is not considered a feasible option considering the extensive wetland and other environmental constraints and the need to restore the shoreline.
- ☐ Patching or re-milling the existing road is considered a temporary fix at best, that will only last approximately three to five years. Full reconstruction of the existing road (including base material) would likely required before 2020.
- ☐ A boardwalk has been considered as part of various options to provide a separate pedestrian path and fishing opportunities. Because of the additional cost/permitting and in order not to confuse the options, this component has been left out at this time, although it could be added to options A (narrowed, two-way road) and B (one-way road).

***Q8. Based on the information provided above, which of the viable options do you most prefer?**

285 respondents answered/45 skipped question

- 45.67% A. Narrowed, Two-Way Road (Multi-use for pedestrians, bikes, and vehicles)
- 23.18% B. One-Way Road (Boat Launch to Beach) + Shoreline Recreation Trail
- 31.14% C. Closed Road/Shoreline Recreation Trail

Maintain two-way versus change traffic flow/roadway use: 45.67% to 54.32%

Improvement Costs

***Q9. How important is construction cost in your consideration of the options (taking into account that the Town will be submitting proposals for grants to help fund any of the work to be undertaken)?**

283 respondents answered/51 skipped question

- I am concerned about costs, but I want to see natural resources/ recreation opportunities improved at Lake Mansfield 58.66%
- Regardless of cost, improvements must be undertaken to enhance lake health, roadway safety, and recreational opportunities. 25.80%
- Minimizing cost should be the primary deciding factor at Lake Mansfield 15.55%
- Other (please specify)

Q10. Please use this area to share with us any final comments regarding the project:

68 respondents answered/262 skipped question

Access comments

- After attending one of the open forums, I was astounded to find that many people want the road to stay open 2 ways. They seemed most concerned about using the area for transportation and not as a recreation area. Many of these people have lived here for a long time. I was most in favor of closing the road to traffic, but now think a one way road would be a good compromise. I am most concerned about the safety of the children and adults who now sit in the road to fish and are in danger of being hit by cars around blind curves while they are walking or on bikes. There are so few places in town not allowed to cars. If road repairs are done and the health of the lake optimized, maybe it would be a good compromise to close the road between June 15 and Labor Day for safety and lake use, then open the

road for the rest of the year. This could be done regardless of which option is selected. Summer is the busiest time around the lake.

- Closing the road is important to the health of the lake. The road is not necessary for any emergency vehicle access and the house on the road could have limited access. It is an amazing gem in the community and we need to preserve it!
- I am the "private residence ". How will I get to my house with option C?
- To minimize costs while allowing access, consider changing to a permeable surface for the one-way road, walking/biking paths and parking area. Removing asphalt surface would help slow car traffic, minimize environmental impact and reduce long-term maintenance expenses.
- As a lifelong resident of GB I do not want to see the road closed to through traffic!!
- Keep the road open. For some of us the view from the car is the only way we enjoy Lake Mansfield.
- I love the closed road but am very concerned about parking at the south end of road and in the neighborhoods by people who live on the south side of the lake, so, with no possibility of a parking area at the intersection of Lake Mansfield Road and Castle Hill, the closed road is problematic, hence my preference for the one way option which avoids this pitfall. I think the one way option should be narrower than proposed, close to as narrow as it would be if we did the narrow 2 way option (8-12 feet) to discourage speeding.
- We as residents of GB must think beyond ourselves. We have to think long term, with our new hotel, additional growth and revenue coming into the town we will need LM road to continue as 2 lanes.
- My mother is wheelchair bound, and we picnic in the parking lot (in our car) on the way home after medical appt.'s in GB. It's nice to be able to see the lake from the parking lot.
- Lake is for recreation. Vehicle traffic should be eliminated.
- This road has always been two way and should always stay that way having it one way should never be considered.
- An in-town pedestrian-accessible nature-oriented lake is rare and very desirable. As long as emergency vehicles can get through the roadway is not critical to vehicular circulation.
- My desire is to see the road closed. If either option A or B are considered by the town, there should be No Truck Traffic allowed which could be implemented immediately.
- The single lane road offers the best of both- reduced impact, plus access to beach parking from both sides.
- Lake should be available to all. Autos & walkers alike.
- fix the road on lake Mansfield road
- Fix the road!
- As far as I know this road was always a two-way road for us and for our children to go swimming and also at times in summer children were brought by bus. Why should it be changed now? Is this for a group who wish to take over the town's thinking and management? We have a river that needs much tending.
- As a mother of 4 who uses the lake almost everyday in the summer, I have never felt unsafe or frustrated with the parking. It is quite sufficient and I don't see any need for improvement. .I also run on this road and would love to have the option to walk vs driving to the lake with the kids/stuff. I am a high user of this area and would love to see it more foot friendly. We also do not have a good playground in town for the kids and this would be a much needed area of investment for the town and its children.
- I regularly walk my dog on a route which takes me past Lake Mansfield. The two-way traffic using the road as a shortcut is a real problem for me and my dog. Car speed is excessive, and there is no way to get off the road safely without standing in puddles or poison ivy. As a pedestrian I don't feel safe walking on Lake Mansfield Road. I also worry about small children during the summer. The speed and frequencies of vehicles on the road makes a child/parent/vehicle catastrophe in the future a very likely

event. No cars, if this is possible, would be a boon to everyone (except possibly drivers taking the shortcut).

- Close the road. Should be cheap to do.
- This winter has taken its toll on the road. Cracked and broken with so many pot holes. The finest quality repairs should be made, making it safer to walk, bike and drive.
- At a recent meeting, Chief Burger noted that the road is safe, no accidents likely due to the fact that it is a very narrow 2-way road and motorists drive slowly, cautiously and are considerate of vehicles coming in the opposite direction and of pedestrians and bicyclists.
- I would consider option B (1 way road) as a viable possibility, but vehemently oppose continuing 2 way traffic.
- Although I chose option B (1 way road) in question 8, I would be happy with Option C (no vehicular traffic) which should be implemented IMMEDIATELY, even if only temporarily, without any funding, while the grants, etc are pursued. That would be beneficial now, and could test out the ultimate viability of a closed road.
- Use the road for walking and standing and observing the beauty of light, water, wildlife... Option C is the only one which would truly help the lake and allow maximum shoreline restoration. With very limited space it would provide the ext opportunities, for appreciation and enjoyment of the lake while walking, standing, sitting, biking, fishing or boating and the safest use for all children and adults. With Option C there is the possibility of creating a simple, aesthetically pleasing, calmer, cleaner, quieter beautiful area with less auto exhaust and, hopefully - on the entire road - less littering. It could become a beloved place treated with respect and reverence.
- If the road is eliminated, I'm concerned about lake traffic on residential roads.
- Less traffic, more safe options along the Lake for recreation. Re-route Ambulance traffic to established roadways. Simple equation-happy, safe people!
- Because of the potential impact on Main Street traffic in the summer, how about one way for nine months and two-way for three months, assuming that this seasonal variation would have a beneficial environmental impact?
- Please keep car access for our families to park the same way and enjoy swimming and picnics.
- I feel it's very important to keep Lake Mansfield a two-way road. We often use the road as a bypass to avoid crowded Main Street. I know there is a concern about the speed in which people travel on this road, however, the use of strategically placed speed bump should mitigate this concern.
- The road could be closed immediately (even as a test of this project) and when the funds become available for lake edge reconstruction, that portion of the project could be undertaken in parts or all at once. The flexibility in the funding of this plan seems desirable.
- The road needs to remain two way as the primary driver for these changes. Improvement of water and a shoreline next. Recreational needs should be addressed after the other priorities. This is a transportation issue first no. Recreation issue second.
- Keep it two way road!!
- Access from the upper campus at Simon's Rock to lower campus (in the winter, when the direct road is often closed) will be awful if Lake Mansfield Road becomes 1-way.
- What I don't understand is why can't the road be left alone?? We have been sharing this road with bikers, walkers, animals and kids for a long time now. If the police would do more speeding control on this road then people who don't know how to slow down would be taken care of. The speeding would be a lot less. How much more is the residents of this town going to be asked to pay for. Over the past several years we have had so much shoved down our throats to pay for. When are you people that know how to spend money going to take a rest for a while????

Environmental comments

- Until the Canadian geese arrived; would use the lake to swim. Now, only go occasionally, walking to enjoy the view.

Cost implications

- I would like the town to minimize the burden to tax payers as much as possible while restoring the bank and improving the water quality issues now present.
- We'd like to see the compulsory community tax used for this project. It might have been imposed for just this issue.
- I love Lake Mansfield but we have to live within our means financially. Necessary improvements only.
- Since the state is now dictating the use of the lake, and the public access, they should be made financially responsible for making it safe.
- Don't understand the town's obsession with dumping money into stuff that's more or less OK. Place is losing character and eventually will look generic.
- It is difficult to choose the preferred option without having any information about cost, and whether this will effect taxes. Why there is no consideration for an option of maintaining the narrow two way road and changing the parking area as described in Option 2. I like that option as it gives more privacy to the beach.
- Survey did not put a cost estimate for each of the three options. My choice between 1 and 3 would be affected by that.
- We have to keep costs down. Taxes are high enough
- Think about the effect on property values
- Depends on who pays

General park & amenities comments

- Like the idea of a boardwalk!
- I wish you would leave the porta-potties up year round. I walk the Lake Road often and don't like having to run into the woods!
- I am not in favor of "enhancing" the lake or increasing use. It's already overused.
- Lake Mansfield is one of the few public swimming areas accessible to all. It needs to continue to be available to everyone - and more swimming areas should be available like Old Maids and Green River.
- We use Lake Mansfield practically every day, for fishing, swimming, or just admiring on our walks and runs. I do not feel it safe enough for my kids to bike there by themselves, which is a shame.
- The playground is good enough. Don't spend a lot of money on it.
- I keep thinking of how battery park city in NY became such a wonderful recreation area by opening access to the water. I think such a model for lake Mansfield is appropriate. it would be a dream to bike, walk and roller blade along a pedestrian path which is now a potted road.
- I think a lot of people use the Lake Mansfield area because there is no alternative. If the town would build an outdoor pool and also provide other picnic spots people would also use those as well and Lake Mansfield would recover.
- Do not overdeveloped.
- I am a regular visitor to the lake and consider it an essential part of my stress management regimen. You can find me generally in the afternoons sitting in a camp chair near the lake's edge, reading a book and taking in the cleansing energy of being outside among the birds and trees, breathing the fresh breezes coming across the lake and it does wonders in bleeding off the stresses of the modern workday. I am strongly in favor of keeping the lake as pristine and untouched as possible while also recognizing some work has to be done to ensure the health of the lake and its surrounding ecosystem. My concern with the expanded parking area and the bypass road proposed in the second and third

proposals is what will happen to the trails that wind around behind the existing parking area. In summer, an ideal day begins with a relaxing hike along those trails followed by a brisk swim in the lake and I hope those trails will remain as intact as possible. I do not want to exclude our summer and holiday visitors from being able to use the lake and surrounding trails as we residents do but I must admit to feeling a bit selfish when the possibility of enhancing the lake and attracting more visitors to it comes up. However, in the long run I am in the camp with those who love the lake and the surrounding area and will support the best compromise between enhancing the lake, protecting its ecosystem and creating an enjoyable yet low key area for people to come and recreate within it.

- While enhancing facilities may seem to be a desirable goal, maintaining the natural site in its current simple form is far more preferable. Let's just work on upgrading the maintenance of what is already there.

General survey comments

- Options are misleading and don't make sense. Why would you close the beach to the southside? So your most dense residents have to drive through town? When you say bicycle access and such, you have to navigate through traffic to get to the safe area which is limited.
- This is obviously a contentious issue. Good luck!
- This is a much better survey! It gets to the heart of the issue. Best of luck, and I can't wait to hear the results.
- This survey is too stark- the second was better - it's disappointing to feel boxed into making false choices. Also, I don't think the last 3 options are realistic-A. Regardless of cost for what kind of improvements? B. submitting grant proposals is not the same as getting money- how sure is that? C. I think the estimated cost of the 3 options needed to be included - how can I make an informed decision? Of course I want a beautiful pristine recreational site that serves everyone but what does that mean- something different to different people. I think it's pretty great the way it is.
- I would like to compliment the Town and the many volunteers on The Lake Mansfield Task Force for the comprehensive and inclusive manner this matter has been approached and handled.
- I'm a pretty sophisticated internet/poll taker, but this is not at all clear. Hope you get the results you want! Hope I do!
- You appear to be doing a solid job of preparation, the prerequisite for success. Good work!
- Thanks for all the research that has gone into this. I'm a newcomer to GB. I think having the lake for recreation only is a good idea.
- Thank you to the leaders of this effort to preserve and improve this wonderful town asset.
- Your first question did not allow for an answer that someone doesn't use Lake Mansfield Rd or the recreational opportunities there. I live in Housatonic but have to fund prioritized projects in what others consider "Great Barrington" while Housatonic needs are ignored.
- Thanks to your committee for all of your education and outreach. I certainly hope there will be some consensus and funds.
- Thank you for all of your hard work.



Lake Mansfield Improvement
Public Input Survey #3

- Results as of 25 April 2016 (334 responses) – Survey ran from 1/14/2016 through 3/25/2016 by Task Force

Q2. If a resident, what street do you live on? (Street number not required)

Alford Road	9	Kalliste Hill	3
Anderson Street	2	Kirk Street	1
Avery Lane	3	Knob Hill Road	8
Beacon Hill Road	1	Lake Avenue	8
Benton Avenue	4	Lake Mansfield Lane	1
Berkshire Circle	1	Lake Mansfield Road	13
Berkshire Heights	2	Lake View Road	7
Brainard Avenue	1	Lewis Avenue	1
Bridge Street	4	Locust Street	1
Bridle Path Lane	1	Long Pond Road	1
Brookside Court	1	Main Street	7
Bryant Court	1	Maple Avenue	4
Burning Tree Road	4	Monument Valley Rd	3
Buttondown Lane	2	North Plain Road	10
Castle Hill Avenue	23	North Street	1
Castle Lane	3	Oak Street	5
Christian Hill Ave	14	Omega Road	1
Cone Avenue	2	Park Street	1
Cooper Road	1	Pleasant Court	1
Copper Beech Lane	1	Pleasant Street	1
Cottage Street	1	Pleasant View Drive	2
Dehon Road	5	Pothul Drive	1
Division Street	3	Prospect Street	13
Dresser Road	3	Quarry Street	1
East Street	7	Ramsey Ave	2
Egremont Plain Rd	1	River Street	1
Fairview Terrace	1	Rosseter Street	1
Fairview Road	1	Russell Street	1
Fern Hill	2	School Street	2
Forest Row	1	Seekonk Cross Road	5
Front Road	1	Seekonk Road	1
George Street	1	Silver Street	2
Gilmore Avenue	2	South Egremont Road	1
Grove Street	1	South Main Street	3
Haley Road	1	South Street	3
Hart Street	2	State Road	3
Heberts Drive	1	Stockbridge Road	1
Hemlock Hill Road	2	Sumner Street	5
High Street	1	Taconic Avenue	3
Highland Drive	6	Warren Street	1
Hollenbeck Ave	20	Welcome Street	4
Humphrey Street	1	West Avenue	2
Hurlbert Road	4	West Plain Avenue	1



Lake Mansfield Improvement
Public Input Survey #3

- Results as of 25 April 2016 (334 responses) – Survey ran from 1/14/2016 through 3/25/2016 by Task Force

Q3. If not a resident, where do you live? (Town or city and state only)

Housatonic (Great Barrington)	3
Parents live in GB	1
Wyantenuck	1

Massachusetts

Alford, MA	2
Dalton, MA	1
Egremont, MA	3
Lee, MA	3
Otis, MA	1
Pittsfield, MA	3
Sheffield, MA	7
Stockbridge, MA	1
Wenham, MA	1

Outside Massachusetts

Ardsley, NY	1
Great Neck, NY	1
NYC	1
Hillsdale, NY	2
Stephentown, NY	1



Meeting Notes

Lake Mansfield Comprehensive Improvements Planning Project
Project Initiation, Lake Mansfield Improvements Task Force meeting
14 September 2015

KZLA was invited to attend the Lake Mansfield Improvements Task Force (the Task Force) monthly meeting on September 14th at 3:00 p.m. at the lake. This meeting also served as the project kick-off.

In attendance

- Christine Ward, LMITF Chairman
- Deb Phillips, LMITF Citizen-at-large
- Joe Sokul, LMITF DPW Superintendent
- Nina Evans, LMITF Lake Mansfield Alliance
- Dale Abrams, LMITF Lake Mansfield Alliance
- Brandee Nelson, LMITF Planning Board
- Bill Cooke, LMITF Selectboard
- Kathy Plungis, LMITF Parks Commission
- Chris Rembold, LMITF Town Planner
- Gaetan Lachance, LMITF Conservation Commission
- Kyle Zick, KZLA
- Danielle Desilets, KZLA

Below are notes from that meeting and topics discussed:

1. Before KZLA joined the meeting, a review of recent water quality testing was given to the Task Force. The brief summary was that there was a small algal bloom in mid-summer and that salt levels were high along the road edge. This study was conducted by Tom Coote (Berkshire Environmental Research Center) and students from Bard College at Simon's Rock.
 - a. The lake is 16 feet deep maximum, with an average depth of 9 feet.
 - b. The last vegetation study was completed in 2012. Chris forward that to KZLA after the meeting.
2. KZLA asked what issues the Task Force found with the site:
 - a. Parking was addressed as a concern at the Lake, however caution was expressed at the notion that parking facilities should be expanded. Perhaps, instead, the parking should be designed so to be appropriate to the space and the natural resources. The potential to move the parking area further away from the water's edge is a possibility. This would allow a green edge to the parking. The parking lot is plowed in the wintertime by DPW.
 - b. Flooding at the outlet was also identified. The current outlet is a 12" diameter PVC pipe. The flooding is an issue both of the lake level and the capacity for the outlet pipe to flow. It was noted that flooding occurs after heavy rains as well as in the winter. Part of the issue is surmised to be that fact that the fire department no longer uses Lake Mansfield as its water source. This use helped to control the water level and since the use has ended the flooding has gotten worse.
 - c. Safety along Lake Mansfield Road was identified. Many people use Lake Mansfield Road as a walking route and with the broad curve to the south of the roadway, the two-way traffic and the lack of shoulders contribute to the safety concern. It is

particularly popular for families, often with strollers. It is also a part of the Town's 3.5-mile walking loop which connects to downtown/Main Street. As well as the riverwalk on the Housatonic River.

- d. Accessibility issues exist, especially for the beach access and parking area. The Lake Mansfield Conservation Forest trails include accessible trails.
 - e. The size and condition of the boat landing is also a concern. The boat launch is now entirely on town-owned land. Beartown State Forest (in Monterey, MA) was identified as a potential example of a boat launch which functions well for its conditions.
3. Recreational uses currently occurring in the landscape (land and water) include the following:
- a. Swimming: the only public swimming facility in town; life guards are on duty 10:30 a.m. to 5:30 p.m. from Memorial Day to Labor Day; children's swim lessons also offered
 - b. Boating (non-motorized): typically no more than six boats at a time; most often: kayaks, canoes and stand-up paddle boards; a second smaller launch is used just south of the beach are by the bike rack but it is very steep
 - c. Walking, biking, running along Lake Mansfield; biking is not hugely popular but a bike rack is provided on site
 - d. Fishing: fishing occurs at the boat landing and along the road; not permitted at the beach
 - e. Ice skating & ice fishing: annual fishing derby held in June
 - f. Bird-watching
 - g. Cross-country skiing & snowshoeing in the winter
 - h. Yoga in July: Monday, Wednesday & Friday, 8-9 a.m.
 - i. Picnicking and play amenities are provided
4. It was expressed that an education component to the planning process is key. Many studies have been completed in the past for various components of the landscape, ensuring that the public is part of this planning process and understand what is being undertaken is essential.
- a. Wednesday, November 4 was identified as a possible date for the first public meeting
 - b. For that meeting, KZLA will have prepared a presentation discussing what we have learned about the landscape; what questions we have for the community; and, potentially images or other sites to react to and discuss. We may also include plans and/or boards for the community to share ideas and information.
 - c. The Task Force would like KZLA to collect data from the community beyond the public meetings. We discussed the potential to use Facebook as a method to stream the meeting, as well as collect comments. Surveys and other methods are also possibilities.
 - d. Following the meeting, the Task Force shared a series of images with KZLA for use in the planning process and meetings.
5. We discussed the Tighe & Bond study which looked at the potential to close one lane of the road, and concerns with that alternative. It was decided that a test closure could be carried out over Columbus Day weekend. This would occur just before the public meeting which

would allow residents to share how they felt the potential change impacted the way that they use the lake and its resources.

- a. While the option was reviewed, it was never taken to the public to be discussed, but each of the Town boards reviewed it. Planning Board had concerns about the fact that a nursing home is located to the north of the lake (Fairview Commons Nursing & Rehabilitation Center) and the hospital is located to the south (Fairview Hospital) and the lake road is used for emergency services between the two.
 - b. The potential road closure was reviewed as a way to ameliorate the conditions of the lake and its resources, but not as a recreational opportunity.
 - c. There are two private properties along the road: one is residence and the other a private pool club – Eastview Pool – which is open in the summer months.
 - d. The current roadway alignment was laid out in the 1970s when it was moved away from the beach and the parking area was established. The beach at that time was much smaller and cars came very close to the water’s edge at that location.
 - e. The lake edge is considered a key component of the landscape as it is a location desired by pedestrians, bird-watchers and those fishing. Historic aerials of the lake show that there was more private land ownership on the west side of the roadway, whereas now, most of the land that is left may be road right-of-way. A better understanding of the ownership along the road will be necessary.
 - f. It was determined that the lake is a destination from both the north and the south and therefore when the one-way option was discussed in the past, it was agreed that one-way heading north from the boat launch to the beach and two-way heading south to the beach would be the best alternative.
6. The Lake Mansfield landscape is a town park, even though some people see it as a neighborhood resource. In fact, visitor’s come from surrounding communities as well.
 - a. The Task Force would like KZLA to consider the impacts to the visual landscape as well as its natural resources.
 - b. Berkshire South Regional Community Center is preparing an end-of-season use report for the Task Force.
 7. The Task Force decided to attempt a trial of the roadway traffic change. The Selectboard had given them permission to do so in the past but it was never completed.
 - a. If approved by the Town’s Boards, the trial will run Columbus Day weekend.
 - b. To ensure that the trial would simulate summertime visitorship a celebration will be planned for the entire weekend with a series of events. This will also help to highlight the resources of the lake, the surrounding landscape and the variety of resources they provide. Suggestions for events included: picnicking and activities along the road using park picnic tables; floating lanterns; a boat parade; ecological activities; organized walks and/or bike rides; bagpipers; and, children’s activities. Opportunities for collecting ideas from the community can also be created with boards and markers and/or images.
 - c. KZLA will support the Task Force by providing plans or graphics to be used at the celebration, as well as to identify where ‘road closure’ signs should be located.
 - d. Members of the Task Force and KZLA will reconvene on a call on Monday, 9/21 at 8:30 a.m. to further discuss the celebration.



8. KZLA asked what members of the Task Force envisioned for the lake and its landscape. Responses included the following:
 - a. A better balance of multi-modal transportation, rather than a landscape dominated by vehicles.
 - b. A road to and through a park but which does not dominate the park landscape.
 - c. A linear recreation park (from several members) where visitors can safely walk and enjoy the sunset and which also reinforces connections through the community.
 - d. Redevelopment of the outlet with high water control opportunity.
 - e. A place to celebrate the natural world.

9/17/2015

DDD



Meeting Notes

Lake Mansfield Comprehensive Improvements Planning Project

Lake Mansfield Improvements Task Force Meeting, Town Hall Meeting Room

16 December 2015, 3:30pm

In attendance

- Lake Mansfield Improvements Task Force members
- Kyle Zick, KZLA
- Danielle Desilets, KZLA
- Scott Medeiros, Woodard & Curran

Below are notes from that meeting and topics discussed, pertinent to the project:

1. Prior to the meeting KZLA shared their notes from the community meeting held on November 4th, as well as the summary of the first public survey for the project.
2. Danielle ran through the summary of the public survey input. The survey was available for responses from Tuesday, October 27th, 2015 until Saturday, November 27st. In that time, 95 people responded to the survey. Not everyone who responded answered all of the questions. Key notes from the survey data include:
 - 83% of respondents are year-round/full-time residents of Great Barrington
 - The most attended events include park clean-up days, volunteer efforts and lake celebration days
 - Most requested events for the future included educational opportunities & nature walks
 - Most participated in activities include walking on road, hiking on trails, picnicking, reading/relaxing/enjoying the sunset, playground use, boating. (Swimming was excluded from survey but well noted on the responses.)
 - Requests for improved amenities/activities includes more beach space, nature educational activities, more hiking trails, and more bike racks.
 - Inappropriate activities with more than one write in included no motor boats/ATVs/snowmobiles, large, private gatherings and drug use.
 - Popular write-in comments for what most needs to change, include: changes in Lake Mansfield Road use, especially for public safety purposes and establishing a pedestrian/bike lane (over 40 total responses). Other improvements included recommendations for ecological concerns; access to the site and its resources; parking; park amenities; and, nothing at all.
 - Popular write-ins for what should not change included the small town, quaint character of the space; the fact that it is open to everyone; the natural scenery/habitat; and, that the parking size and beach size should not be increased.
 - Safety along the road and the roadway condition, and water quality of the lake were identified as the most critical issues to be dealt with.
 - There was a wide variety of responses from the community in what they hoped the park to become in 5-10 years. A few of the most popular include: establishing one-way road with delineated bike/pedestrian lane; a peaceful place of natural refuge and scenic resources; and, minimal alterations/development.

It was requested that the organization was edited in the survey results so that it could be more readable if shared with the community. Also, it was suggested that the next survey be published in Spanish, which will be undertaken by the task force; and print outs or web assistance will be available at the library.

3. Next, Kyle discussed the conversation we had prior to the meeting with representatives from Great Barrington Emergency services. At this meeting was Southern Berkshire Volunteer Ambulance Squad Bill Hathaway, GB Police Chief Bill Walsh, and GB Fire Chief Charlie Burger, DPW Director Joe Sokul, Town Planner Chris Rembold, and Town Manager Jennifer Tabakin. The conversation was very positive and none of the representatives foresee an issue with having Lake Mansfield Road converted to a one-way. Bill Hathaway stated that it is more important to have a quick response to a call location, then from the location to the hospital. The ideas of restricting all traffic on the road except to residents and emergency services, and the option of gating the parking lot were discussed as options to consider in the planning process.
4. Kyle presented a series of sketch plans and sections looking at parking at the north end of the site, the boat launch, and potential sections of one-way use of Lake Mansfield Road. All the plan options assumed a one-way use of LM Road from south to north.
5. Options for parking near the beach included parking spaces from 30 to 42 vehicles, including accessible spaces. All of the options will be redeveloped considering the comments discussed:
 - Consider portions of the proposed parking to be overflow (turf) in place of hardscape
 - Consider the circulation and connection of pedestrians throughout
 - Consider the apple trees on the beach side of the road
 - Parking can move further into the wooded area (the loop trail was designed set back from the existing parking so that this could occur)
 - Consider winter maintenance and where snow storage would be located
 - Having beach parking not having to cross the road is great
 - Through traffic best not to drive through the parking lot (though it does provide inherent traffic calming)
 - Consider emergency access to the beach area
 - Consider view corridors into/from parking areas
 - Consider showing the existing trails on the plans for public
6. Chris mentioned that he recently had a conversation with the Office of Fish & Game and their Office of Fishing & Boating Access. They are willing to design, permit and construct the boat launch area based on the design proposed by this project; it will however require 6-8 parking spaces. The four options showed by KZLA offered three to 6 spaces in various arrangements, all assuming car top access and no trailers. It was suggested that the next survey ask the community which types of boat are most used and whether trailer parking is necessary. It was also suggested that a kayak rack could be included in the area, and it was noted that having space between the parking and the launch/lake edge was useful. Also, a crosswalk should be shown from the sidewalk on the east side of Hollenbeck Road.
7. The one-way cross-sections were reviewed and comments included:
 - It was generally agree that having a buffer between traffic and the pedestrian/bike lane was preferred
 - Consider bicycles their two way use of the lane
 - Consider winter maintenance



- The boardwalk along the edge of the shoreline was desirable
- 8. It was decided that outreach to the residents immediately around the lake could wait until later in the planning process a preferred plan has been developed.
- 9. The next community meeting has been scheduled for Wednesday, January 13th. Location and time to be determined. A follow up meeting with the Task Force will be held on Wednesday, January 6th at 3:30pm.

12/17/2015

DDD

Meeting Notes

Lake Mansfield Comprehensive Improvements Planning Project

Lake Mansfield Improvements – Public Forum #2, Monument Valley Middle School

13 January 2016, 7:00pm

In attendance

- Lake Mansfield Improvements Task Force members
- Kyle Zick, KZLA
- Danielle Desilets, KZLA
- Scott Medeiros, Woodard & Curran

Below are notes from that meeting and topics discussed, organized by topic:

1. To begin the conversation, KZLA presented design alternatives for Lake Mansfield Road, as well as parking at the beach and boat launch. The alternatives presented a full range of ideas for community input.

What follow are the comments shared by the community members present:

2. General
 - a. Residents on the north end of the lake are interested in the lake outlet control structure since the road floods and the lake level has been rising.
3. Lake Mansfield Road
 - a. The only politically viable option is the close the road
 - b. What alternative materials for the road or trail are available that aren't asphalt?
 - c. Consider the aesthetics for a trail that would replace the road-in the road closure option
 - d. Concerned about parking in the neighborhood if the road is closed.
 - e. Enjoy driving along the lake and favor keeping the two way road
 - f. A traffic study is needed for any changes to circulation
 - g. In a one-way scenario, could parallel parking be located along the road where space allows?
 - h. Would the boardwalk trail require extensive permitting?
 - i. If the road were closed would handicap access be accommodated?
 - j. Closing the road allows more recreational opportunities
 - k. Do not like the one-way option
 - l. Could the road be open 9 months of the year and only closed May through September?
 - m. Two-way scenarios aren't safe; consider one way or close the road
 - n. An improved two-way option (with road widening) would generate faster vehicle speeds and permitting would be difficult
 - o. Current two-way road with varied width has built in "chokers" that calm traffic
 - p. What is the community willing to pay for (capital cost and maintenance cost)
 - q. Boardwalk trail is attractive, but need to explore cost and environmental impact
 - r. Boardwalk could help keep two-way road in a safer way
 - s. Will vehicles travel faster on a one-way road than a two-way road?
 - t. Traffic calming is needed to keep speeds down
 - u. Concerned that with a one-way road will increase cut through traffic on Dehon Road (a private road). Prefer two-way or closed road.
 - v. Will travel to the hospital be impacted with road circulation changes?
 - w. All design options should consider what is best for the health of the lake

- x. Which option is best from an environmental perspective: i.e. less pavement, less sedimentation?
 - y. What will road materials be? Can we consider something more environmental rather than asphalt?
4. Beach Parking
- a. Consider how pedestrians walk from trail parking to the beach (and crossing traffic or parking)
 - b. Should the parking capacity consider current summer peak parking that includes what is in the current parking lot and along Lake Mansfield Road?
 - c. Can the parking be reconfigured, but keep Lake Mansfield Road in its current location?
 - d. Concerned about limiting capacity of parking since it may mean some are turned away (and this park is for everyone; no resident sticker is required)
 - e. Consider lighting and late night activities and how proposed changes will affect how people use the space after dark
5. Boat Launch Parking
- a. What are the paving materials?
 - b. How is stormwater treated?
 - c. Will there be lighting?
 - d. Concerned about vandalism of a dock
 - e. Important to have a lake view as approaching from Hollenbeck Road; not view of parking
 - f. Is more parking needed near the boat launch if Lake Mansfield Road were closed?
6. Next Steps
- a. An online survey can be found on the Town website with all of the options presented at the meeting for the public to provide additional feedback.

1/16/2016

KZ

Meeting Notes

Lake Mansfield Comprehensive Improvements Planning Project

Lake Mansfield Improvements Task Force Meeting, Town Hall Meeting Room

8 February 2016, 3:30pm – KZLA & Woodard & Curran by teleconference

In attendance

- Lake Mansfield Improvements Task Force members
- Great Barrington community members
- Kyle Zick, KZLA – remote
- Danielle Desilets, KZLA – remote
- Scott Medeiros, Woodard & Curran – remote

Below are notes from that meeting and topics discussed, pertinent to the project:

1. Danielle shared a preliminary summary of the latest on-line survey. At the time the summary was prepared, 119 responses had been registered, and approximately 60% of those had been summarized. Initial findings include below:
 - a. Lake Mansfield Road
 - i. Opt A – leave it as it is: 16.4%
 - ii. Opt B – maintain two-lane, widen to 22 feet: 22.4%
 - iii. Opt C – Narrow to one-way: 39.7%
 - iv. Opt D – close the road: 21.6%
 - b. Recreation Area parking
 - i. Opt A – Perpendicular parking with spaces on beach side: 25.0%
 - ii. Opt B – Perpendicular parking with drop-off on beach side: 21.7%
 - iii. Opt C – One-way angled parking: 27.2%
 - iv. Opt D – Traditional parking: 26.1%
 - c. Boat Launch
 - i. Opt A – Pull-off with dock: 34.5% (responses support dock)
 - ii. Opt B – Split pull-off: 19.6%
 - iii. Opt C – Three spaces off-street: 18.4%
 - iv. Opt D – Six spaces off-street along woods: 27.6%
 - d. Beach size
 - i. Opt A – Moderate (existing): 64.7%
 - ii. Opt B – Empty (expanded beach): 8.8%
 - iii. Opt C – Crowded (limited beach): 26.5%

*At the time these notes were drafted, the survey responses were up to 187, but still no responses on the on-line Spanish version of the survey. The Task Force has a handful of surveys completed in Spanish in the ESOL classes which can be sent to KZLA for manual input.

It was decided that the survey would be closed on Monday, 2/22. After that time, KZLA will provide the Task Force with an updated summary of responses. It was requested that the summary include where the outreach went to.

2. A letter from the public was discussed with the writer present. A copy of the letter was then submitted to KZLA for the record.

3. The public forum is scheduled for Wednesday, March 2nd at 6pm at the Fire Station. It was discussed that for each of the Lake Mansfield Road options, additional information needs to be presented in a very clear way. The Task Force identified their three important criteria:

- a. Impact to water quality and habitat
- b. Impact on safety
- c. Impact on access

In addition, cost implications (including funding opportunities) and permitting requirements should be identified as critical factors. All five of these criteria will be discussed in relation to each of the Lake Mansfield Road options (#five being leaving the road as is with no parking improvements).

In addition to this information, the presentation will also include a matrix of pros/cons for the roadway options.

The Task Force requested that KZLA share the draft presentation for the next public forum one week in advance for review and comment. KZLA will share by Wednesday 2/24.

4. The Task Force had received the list of the pool club members, which contained 53 members. The Task Force intends to send a letter regarding the planning efforts.
5. We briefly discussed the outlet control options, but will discuss those further at the next Task Force meeting. This information does not need to be included in the next public forum.
6. For the next survey, it was requested that the questions include demographic information as the first survey did. Including demographics on whether respondents live in town, year-round; own property in town, but do not live there year-round; or, are from out of town, in addition to requesting neighborhood information will be helpful to ensure that the data collected represents the whole community. It will also include the question: how did you learn about the survey?
7. The final planning report does not need to be submitted in time for the Town meeting since it will not require the Town to allocate funding at this time. However, it will need to be presented to the Selectboard (who typically meets on the second Monday of the month.) The proposed timeline included in the KZLA proposal suggested that the project would be complete by the end of March. This may shift based on where the currently project is in the design process. It was suggested that the Task Force will present the final report to the Selectboard in May.
8. Next Task Force meeting scheduled for Monday, 3/14 at 3:30pm at Town Hall.

2/16/2016

DDD

Meeting Notes

Lake Mansfield Comprehensive Improvements Planning Project

Lake Mansfield Improvements Task Force Meeting, Lake Mansfield site walk

25 April 2016, 4:00pm

In attendance

- Lake Mansfield Improvements Task Force members
- Kyle Zick, KZLA
- Danielle Desilets, KZLA
- Scott Medeiros, Woodard & Curran (W&C)

Below are notes from that meeting and topics discussed, pertinent to the project:

1. Prior to the meeting, KZLA and W&C flagged the publically preferred parking option for the recreation area (Option D from Public Meeting #3), as well as the boat launch preferred alternative (Option D).
2. The LMIF members and the consultant team met at boat launch and reviewed the schematic layout for the launch. At the boat launch it was suggested that plans include some evergreen screening for the adjacent neighbor.
3. Scott noted that in a recent conversation with DEP, they noted that grants for launches which include a hose bibs for the cleaning of boats are sometimes preferred. The houses in the area do have Town water so this is something that could be considered.
4. Next, the group walked the length of Lake Mansfield Road. We noted the varying widths of sections of the road and the variety of existing challenges to roadway alignment (i.e. outcroppings, lack of vegetated lake bank, swales and vernal pools). We also laid out the variety of roadway width options – including two-way and one-way and separate recreation lanes/trails. Observing the existing complex traffic patterns, including two-way vehicular traffic, cyclists, pedestrians, fisherfolk, was also extremely useful.

It was noted that one option for one-way traffic is to consider a pedestrian lane with a vertical separation – it would essentially functions as a sidewalk. This would present difficulties for cyclists to change lanes and would therefore keep them in the road. Another one-way alternative discussed, is to allow cyclists in the road following vehicular traffic rules (traveling in the same direction as vehicles) and to use the recreation lane to move from north to south. KZLA said they would review AASHTO regulations for minimum width requirement in this alternative.

5. In discussing potential options for bank stabilization, it was requested that some illustrative examples of the options could be provided.
6. There was a discussion regarding moving utility poles. In some instances the poles are very close to the road and within the 30' right-of-way limiting the possibility of realigning the road. Moving poles is relatively simple and cost efficient in comparison to burying the lines underground. (These poles carry phone, cable & power lines and would need to be placed at a minimum of 36" below grade.) It was also noted that for the stretch of Lake Mansfield Road along the existing recreation area parking, the lines have already been buried.

7. It was suggested that the straight alignment of the road near whale rock be realigned with a curve, both to slow vehicles and to break up the long stretch of straightaway in the road. A curve could also allow more space on the lake side to revegetate the bank and potentially create a good fishing location.
8. In road scenarios where pedestrians are in potential conflict with vehicles (i.e. two-way road traffic), pedestrian refuge areas should be considered along curves of Lake Mansfield Road. These would provide pedestrians have a safe place to step out of the road when vehicles are passing.
9. Between the two driveways along LM Road (Eastview pool & private residence), consider pushing the road to the east to gain bank stabilization/revegetation area.
10. At the recreation area parking, there is a substantial amount of burning bush (*Euonymus alatus*) – a Mass. invasive species. There may be some significant trees (i.e. cottonwoods, oaks) that can be saved with the layout and alignment of the proposed parking area and by-pass road.
11. It was noted that the existing gravel pull-off, located to the north of the park area and adjacent to the lake outlet, could be reclaimed as park space.
12. Finally, there was a brief conversation regarding the amenities at the park area. It was stated that the Parks Department is not looking to add to the play structures or change any amenities. However, in the comprehensive improvement plan, any of the amenities that can be made accessible by providing an accessible route to them should be.
13. The final public survey ran from January 14th and was closed on April 25th. A total of 334 responses were collected. KZLA will share the survey results with the Task Force.
14. The next LMITF is scheduled for May 9th but will not include the KZLA team. The Task Force will be reviewing the plans proposed to date and will make recommendations to the consultant team for the final comprehensive improvement plan.

4/27/2016

DDD

Appendix B: Funding Sources Memo

LAKE MANSFIELD

MEMORANDUM



TO: Kyle Zick Landscape Architects, Inc
FROM: Woodard & Curran
DATE: March 1, 2016
RE: Lake Mansfield Improvements - Funding Sources

Woodard & Curran has researched potential local, state and regional funding options for the Lake Mansfield Recreation Area Improvements including the proposed roadway improvements, parking improvements and boat launch area improvements. Woodard & Curran also evaluated potential federal funding options, but it was assessed that the proposed improvements may not be competitive at the federal funding level based on the scale and scope of the proposed work.

The table below summarizes the potential funding opportunities for each of the Lake Mansfield road and parking design options.

Summary of Potential Funding Options for Lake Mansfield Road & Parking

Road & Parking Design Options	Potential Funding Options
Existing Conditions	N/A
Existing Road + Parking	Massachusetts Land and Water Conservation Fund Massachusetts Environmental Trust Grant Programs Massachusetts Nonpoint Source (Section 319) Program
Realigned Road + Parking	Chapter 90 Massachusetts Land and Water Conservation Fund Massachusetts Environmental Trust Grant Programs Massachusetts Nonpoint Source (Section 319) Program
Widen Two-Way Road + Parking	Chapter 90 Massachusetts Land and Water Conservation Fund Massachusetts Environmental Trust Grant Programs Massachusetts Nonpoint Source (Section 319) Program
One-Way Road + Parking	Chapter 90 Massachusetts Land and Water Conservation Fund Massachusetts Environmental Trust Grant Programs Massachusetts Nonpoint Source (Section 319) Program
Closed Road + Parking	Chapter 90 Massachusetts Land and Water Conservation Fund Massachusetts Environmental Trust Grant Programs Massachusetts Nonpoint Source (Section 319) Program

Description of each of the potential funding options are provided below.

Funding Options for Roadway Improvements

Chapter 90

The Chapter 90 program entitles municipalities to reimbursement for capital improvement projects for highway construction, preservation, and improvement that create or extend the life of capital facilities. The funds can be used for maintaining, repairing, improving, or constructing town and county ways and



bridges that qualify under the State Aid Highway Guidelines issued by the Public Works Commission. Items eligible for Chapter 90 funding include roadways, sidewalks, right-of-way acquisition, shoulders, landscaping and tree planting, roadside drainage, street lighting, and traffic control devices. A municipality seeking Chapter 90 reimbursement for a project must complete a Chapter 90 Project Request Form and an Environmental Punch List for each proposed project and submit it to the appropriate MassDOT District Office. Each municipality in Massachusetts is granted an annual allocation of Chapter 90 reimbursement funding that it is eligible for, and the municipality can choose among any eligible infrastructure investments. In FY2016, Great Barrington's apportionment is \$418,929.

For more information, please visit the [website](#).

Funding Options for Comprehensive Project to include Recreation Trails, Roadway, Parking Lot and Boat Launch

Massachusetts Land and Water Conservation Fund

The LWCF is administered by Massachusetts on behalf of the National Park Service (NPS). The program is intended to create and maintain a nationwide legacy of high quality recreation areas and facilities and to stimulate non-federal investments in the protection and maintenance of recreation resources across the United States. LWCF grants reimburse a community 50% of the total project cost, up to a grant maximum of \$250,000.

Eligible projects are those for the acquisition of parkland, development of a new park, renovation of an existing park, development of trails in an existing conservation area, or the acquisition of conservation land. Applications will be accepted from municipalities that have Open Space and Recreation Plans that are approved or currently under review. This program typically opens in November/December and applications are due the following February. The FY2016 round just finalized and applications were due February 11, 2016.

Great Barrington is currently eligible to apply - they have an updated Open Space and Recreation Plan. For more information, please visit the [website](#).

Massachusetts Environmental Trust Grant Programs

The Massachusetts Environmental Trust (MET) is one of the state's largest sources of funding for water quality initiatives. The goals are to improve and safeguard the quality of the waterways throughout the Commonwealth. Eligible applicants include fund nonprofit organizations, municipalities, scientists and educational institutions through four distinct programs:

- General Grants - The General Grants support nonprofit organizations and municipalities in efforts to restore, protect, and improve water and water-related resources of the Commonwealth. Proposals are accepted once annually for programs and initiatives that address threats to the health of the state's water bodies and watersheds.

This program typically accepts letters of Inquiry in October and full proposals are due in March of the following year. For more information, please visit the [website](#).

Massachusetts Nonpoint Source (Section 319) Program

This grant program is authorized under Section 319 of the federal Clean Water Act for implementation projects that address the prevention, control, and abatement of nonpoint source (NPS) pollution. To be eligible to receive funding, a 40% non-federal match is required from the grantee. From fiscal year 1990 through 2016, 319 grant awards have ranged from \$10,000 up to \$500,000.

Request for Proposals are typically announced annually in April with a deadline in June. Awards are typically announced annually in October. For more information, please visit the [website](#).



Woodard & Curran also identified several additional potential funding options for the Lake Mansfield Recreation Area Improvements. These funding options are smaller in monetary value (\$50,000 or less), but may be options for funding some of the proposed elements such as the boardwalk, boat dock, and beach features (i.e. tables, benches, playground, etc.). Descriptions of the potential funding options are provided below.

Funding Options for Comprehensive Project to include Recreation Trails, Roadway, Parking Lot and Boat Launch

Parkland Acquisitions and Renovations for Communities (PARC) Grant

The Parkland Acquisitions and Renovations for Communities (PARC) Grant Program is intended to provide funding to cities and towns to acquire and develop land for park and outdoor recreation purposes. The PARC grant is a reimbursement program and provides financial assistance to municipalities for the acquisition of recreation land, development of new parks, or the renovation of existing parks. Eligible communities must have a current Open Space and Recreation Plan on file with the Division of Conservation Services. Cities of any size, Cape Cod communities, and towns with more than 35,000 residents are eligible for the grant maximum of \$400,000. Towns with less than 35,000 residents are eligible for a maximum grant award of \$50,000, unless the proposed project is accessible via public transportation and/or has parking for 100 cars. Grant applications generally are due in July and awarded in November.

Great Barrington is currently eligible to apply - they have an updated Open Space and Recreation Plan. For more information, please visit the [website](#).

Field Pond Foundation

The primary mission of Fields Pond Foundation is to provide financial assistance to nature and land conservation organizations that are community-based and that serve to increase environmental awareness by involving local residents in conservation issues. The grants range from \$500 to \$25,000, with most falling within the range of \$2,000 to \$10,000. The Foundation is willing to consider multiple-year grants. For more information, please visit the [website](#).

LL Bean's Charitable Giving Program

The Maine-based outdoor retailer LL Bean's Charitable Giving Program focuses its giving on national and local outdoor conservation and recreation organizations. Grants are made to qualified, federal tax-exempt 501(c)(3) organizations and projects that include: "the maintenance and protection of our natural resources; efforts to engage more young people in activities that are relevant to our product line, such as camping, hiking, cycling, canoeing, kayaking, fly fishing, hunting, snowshoeing and cross-country skiing; and programs that have proximity to LL Bean Retail Stores." For more information, please visit the [website](#).

Copeland Family Foundation

The Milton, MA-based Copeland Family Foundation (no web page) makes grants (generally starting at \$5,000, but occasionally larger) to a large number of social service, educational, conservation and other nonprofit organizations, mostly (but not exclusively) located south and west of Boston. Groups seeking funding should do so in the form of a letter summarizing the project and specifying the amount requested,



along with evidence of 501(c)(3) tax-exempt status. Send it to: Copeland Family Foundation, Inc., 1183 Randolph Avenue, Milton, MA 02186. There are no specified application forms or deadlines.

Nicholas B. Ottaway Foundation

Nicholas B. Ottaway Foundation under the Community Impact Fund offer grants to three priorities: Arts in the Community; Public Health; and Environment. Community Impact Fund members will generally make a site visit before approving a grant. Geographic preference is given to projects and organizations within the states and communities where fund members work or reside in (which includes Massachusetts). The average Community Impact Fund grant runs from \$3,000-\$20,000. While the Foundation accepts online grant applications between November 1st and March 31, it is strongly recommended that grant seekers fill out and submit the short letter of intent/inquiry form first. For more information, please visit the [website](#).

Acres for America

Acres for America, a partnership between Walmart Stores, Inc. and the National Fish and Wildlife Foundation, supports efforts to conserve lands of national significance, protect critical fish and wildlife habitat, and benefit people and local economies. Preference will be given to projects that achieve more than one of the following program priorities: conserve critical habitats for birds, fish, plants, and wildlife; connect existing protected lands to unify wild places and protect critical migration routes; provide access for people to enjoy the outdoors; and ensure the future of local economies that depend on forestry, ranching, and recreation. All grant awards require a minimum 1:1 match of cash or contributed goods and services. Nonprofit organizations, state and local government agencies, Indian tribes, and educational institutions are eligible to apply. Applicants are strongly encouraged to contact the Regional Office Director [Amanda Bassow, amanda.bassow@nfwf.org] to discuss project ideas prior to applying. Acres for America priorities include:

- Conserve critical habitats for birds, fish, plants and wildlife;
- Connect existing protected lands to unify wild places and protect migration routes;
- Provide access for people to enjoy the outdoors; and,
- Ensure the future of local economies that depend on forestry, ranching and recreation.

For more information, please visit the [website](#).

Nancy Foss Heath and Richard B. Heath Educational, Cultural And Environmental Foundation

The Nancy Foss Heath and Richard B. Heath Educational, Cultural And Environmental Foundation (no web page) was established several years ago "to award grants in such manner and amounts as the Trustees may determine for the preservation and maintenance of the natural environment of such areas in New England as the Trustees may select, including grants to existing charitable organizations which already hold title to such areas". While a specific form is not required, organizations seeking funds should submit a copy of their IRS exemption letter along with a financial statement for the most recent year, and a statement of purpose. Send it to: Gerald B. O'Grady, III, Esquire, N. F. Heath and R. B. Heath Educational, Cultural And Environmental Foundation, c/o Tyler & Reynolds, P.C., 77 Summer St., Boston, MA 02110. Telephone: (617) 695-9799. There are no specified application deadlines.

Verrill Foundation

The Maine-based Verrill Foundation (no web page) makes grants (generally in the \$1,000-\$5,000 range) to social service, youth, and environmental organizations, primarily in Maine and Massachusetts. The



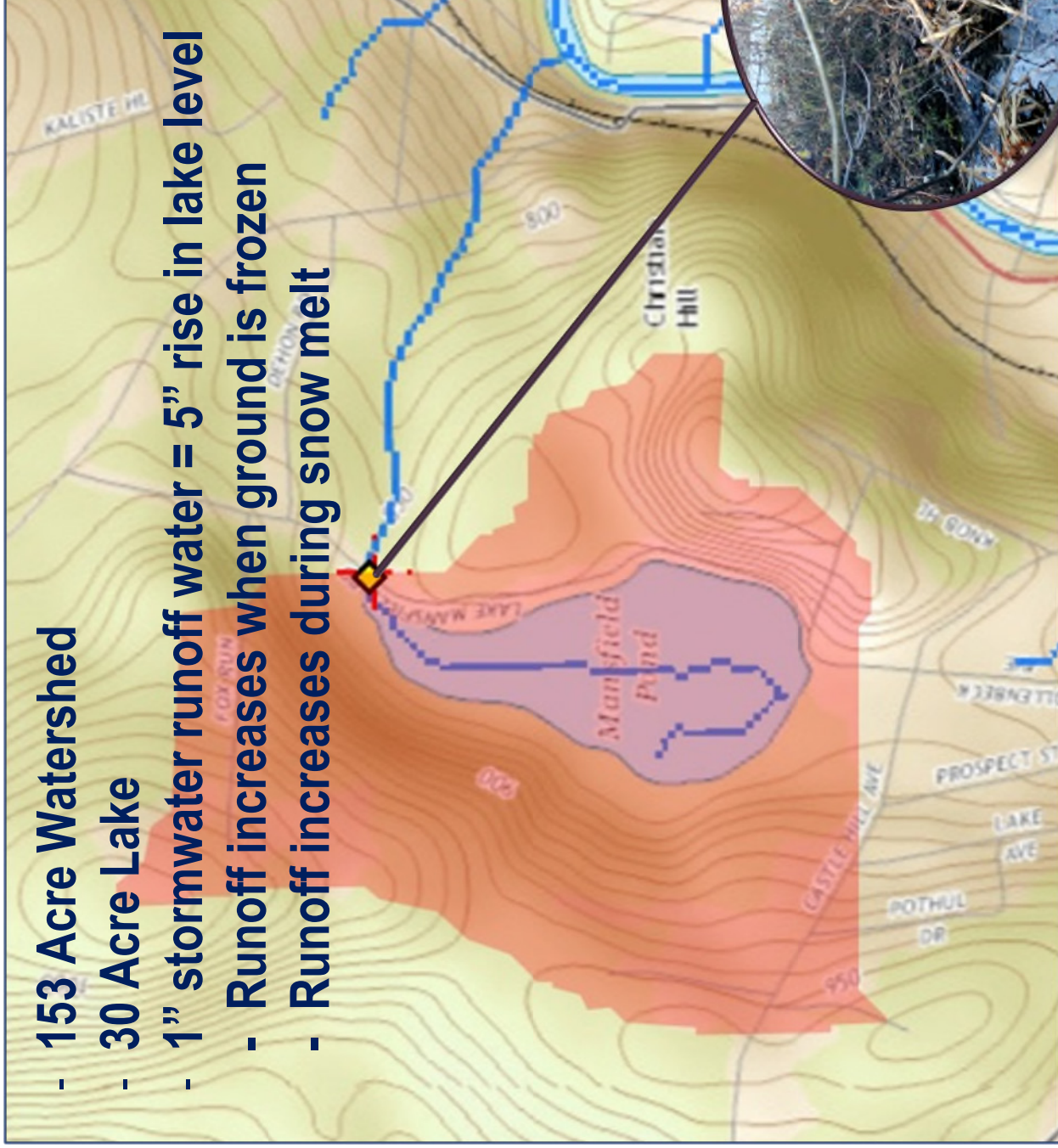
Foundation accepts written proposals from §501(c)(3) organizations. Send them to: Peter J. Verrill, Verrill Foundation, 7 Broad Cove Way, Cumberland Foreside, ME 04110. Telephone: (207) 846-1109. There are no specified application forms or deadlines.

Appendix C: Lake Mansfield Outlet Control Solution Notes

LAKE MANSFIELD

LAKE MANSFIELD WATERSHED

- 153 Acre Watershed
- 30 Acre Lake
- 1" stormwater runoff water = 5" rise in lake level
- Runoff increases when ground is frozen
- Runoff increases during snow melt



Existing Outlet
Control:
Single 12" Pipe



Outlet Control Issues

- Relatively small culvert pipe → higher probability debris blocks inlet
- Shallow cover over pipe → higher probability pipe freezes
- Shallow cover over pipe → higher probability road cracks
- Road low spots → road occasionally overtops

Potential Solution

- Raise road surface 6-12 inches
- Replace 12" pipe with Concrete Box Culvert (~18"x48")

Box Culvert Advantages

- Larger opening reduces likelihood of clogging or freezing
- Concrete structure supports vehicle loads with minimal cover



Example Box Culvert

Appendix D: Lake Mansfield Management Memo

LAKE MANSFIELD



MEMO

To: Town of Great Barrington
KZLA

From: Mickey Marcus

Date: November 4, 2015

**RE: Community Forum #1
Lake Mansfield Management Options
NEE file: 15-4888**

NEE has reviewed the 2012 aquatic vegetation survey conducted at Lake Mansfield by Geosyntec consultants, and we are using these data to develop potential management options for control of invasive plant species and the management of dense vegetation in the recreational areas. Using those data in the report, we identified data gaps of information necessary to develop a Lake Management Plan for Lake Mansfield. Suggestions and recommendations to fill these data gaps to develop an overall lake management plan are provided by outlining a work plan and specific recommendations for 2016 evaluations of aquatic vegetation and water quality. These data are suggested for collection in the Spring and Summer of 2016, and the development and permitting of a management plan for possible implementation in 2017.

Prepared by: M. Marcus, Senior Scientist, Principal
Dr. Mark June-Wells, Certified Lake Manager
Scott Fisher, V.P Restoration Group and MA Certified Aquatic Applicator

1. LAKE MANSFIELD DATA GAPS

The following items have been identified as gaps in the current dataset for Lake Mansfield:

- 1) Watershed Size
- 2) Lake Bathymetry
- 3) Land Use/Cover Types (watershed)
- 4) Internal Lake Nutrient Dynamics
(Website indicates that there is an on-going 2yr study?)
- 5) Storm Water Nutrient Study
- 6) Mussel/Snail Community Study
- 7) Fish Community Study

2. PLANT COMMUNITY MANAGEMENT

Based on the 2012 data set, the plant community is diverse and productive. There were two non-native (invasive) species documented in the Lake. Overall, this plant community should be managed in a manner that maintains the overall community structure. Aggressive weed management techniques may have the risk encouraging the growth of the invasive species *Myriophyllum spicatum* (Eurasian Milfoil) and *Ceratophyllum demersum* (Coon Tail), and care will be needed to determine the best plant management techniques.

3. PRELIMINARY RECOMMENDATIONS

- a. Stocking *Euhrychiopsis lecontei* (milfoil weevil). A new stocking may be beneficial as the last stocking was in 2000. There is documented evidence of plant damage that can be attributed to milfoil weevils. Identifying weevil damage on a yearly basis would be a beneficial practice to ensure that the weevil population is still active/effective.
- b. Maintain benthic barrier installation in swimming area. This is a low-tech and moderately effective measure to reduce weeds from the swimming area. Plant material should be cut prior to installation. Maintenance should occur yearly.
- c. Conduct new Plant Survey. An updated plant survey should be conducted during the 2016 growing season. We recommend that this work be completed prior to June 15 as *Potamogeton crispus* (Curly-leafed Pond Weed) senesces early in the summer season. The plant survey should include a quantitative *Myriophyllum spicatum* (Eurasian Milfoil) Survey. Species present should be mapped using GPS/GIS technologies to quantify the total acreage of individual stands. This will allow for tracking of the *M. spicatum* population size/distribution,

4. WEED MANAGEMENT OPTIONS

There are several techniques used in Massachusetts for managing weeds and algae. The first option is to take no management steps. All options have advantages and disadvantages. Until a more detailed Lake survey is conducted, NEE is not able to provide the Town of Great Barrington with a set of preferred recommendations. The list below provides the Town with management options for future consideration. Several options may be used concurrently (e.g. hydro-raking and herbicide applications). All options will require environmental permitting through the DEP and the Great Barrington Conservation Commission.

1. Weed Harvesting.

The use of a mechanical harvester and/or hydro-rake is an effective technique to physically remove excess plant material. The benefits include: the reduction of organic material from the Lake using a non-chemical approach. It is an expensive option \$20,000-\$60,000 depending on the area to be harvested. Weed harvesting is not a long-term effective solution for Milfoil.

2. Herbicide

The use of aquatic herbicides is used by the Commonwealth to manage excessive vegetation at Lakes and Ponds in State Parks, and by private homeowners and Associations to manage excessive weed growth and algae. The advantage of using an herbicide approach is that specific plants or treatment locations (e.g. swim beach, boating areas) can be targeted by using a contact herbicide. One product we would consider is Flumioxazin, This herbicide has a short half- life, controls a broad range of aquatic species, including algae, and has low human health risks. Costs are relatively low compared to mechanical harvesting, and there is typically long term effectiveness of vegetation control following the treatments. There are a number of different aquatic herbicides which could be considered based on additional plant survey work, and water quality data. Disadvantages are possible impacts to rotifer and zoo-plankton in the lake and impacts to non-target native plant species. Costs are typically \$800-\$1200/acre.

5. LAKE MANAGEMENT RECOMMENDATIONS FOR 2016

- 1) Conduct 2016 Aquatic Plant Survey

- 2) Conduct Water Quality Monitoring

This work should be done in Lake Mansfield. Additional sampling (e.g. TSS) at the drainage inlets could be conducted during rain storm events.

- Secchi Depth
- Temperature
- Dissolved Oxygen
- pH
- Conductivity
- Specific Conductance
- Algae Community
- Alkalinity
- Ammonia

- Nitrite/Nitrate
 - Total Kjeldahl Nitrogen
 - Total Phosphorus
- 3) Evaluate Lake Outlet Structure
- Engineering review of structure
 - Opportunities for flood control
 - Opportunities for flow control and water depth management
- 4) Development of a comprehensive Lake Mansfield Management Plan
- Short Term management options
 - Long-term lake and watershed options

Appendix E: Lake Mansfield Improvements Preliminary Design Studies

LAKE MANSFIELD

Public Forum #2
13 January 2016
Design Studies



Existing Conditions



22' ROADWAY



Existing Conditions

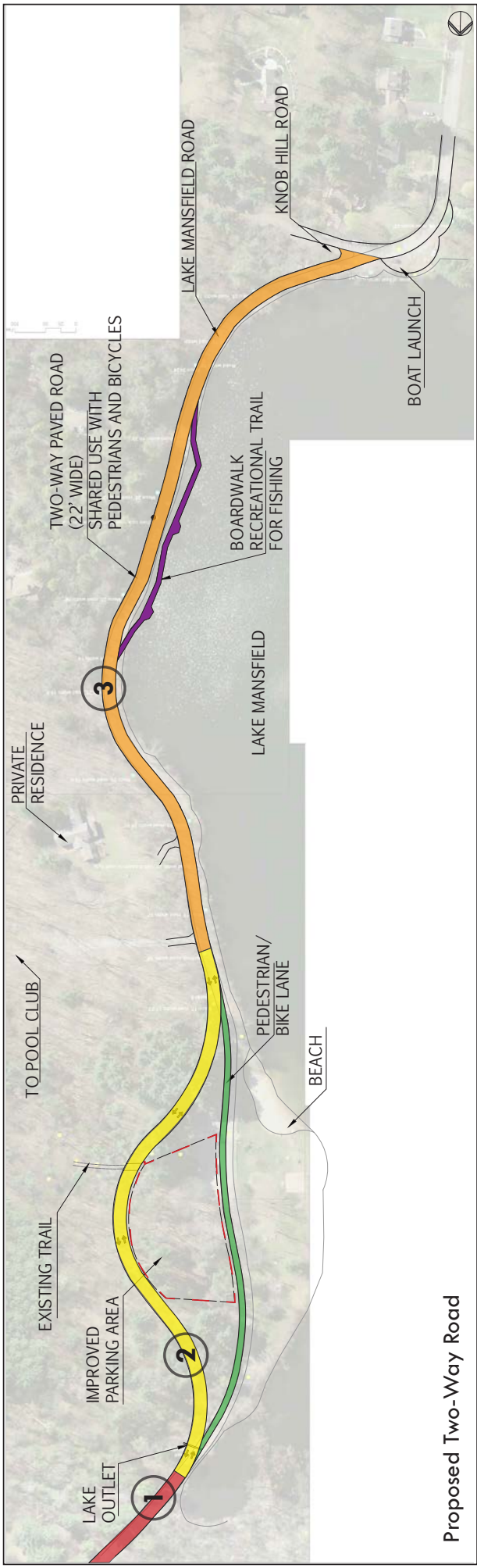
LAKE MANSFIELD road | as-is road + parking improvements **kzla**

Cost Range: \$

Cost Range: \$

- Road needs re-surfacing
- Road still shared use
- Lake edge condition not improved
- Freeze/thaw cycle will remain a problem for roadbed
- Some loss to conservation forest for improved parking





LAKE MANSFIELD road | proposed two-way road

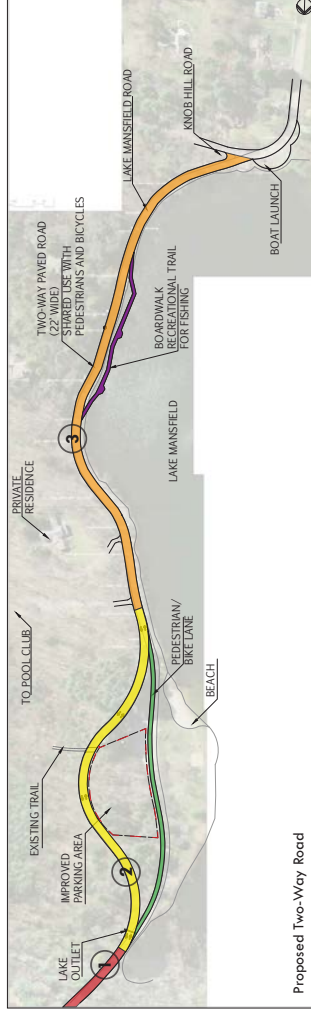
Pros

- Wider road improves accessibility for cars + pedestrians
- Road + parking is moved away from beach front

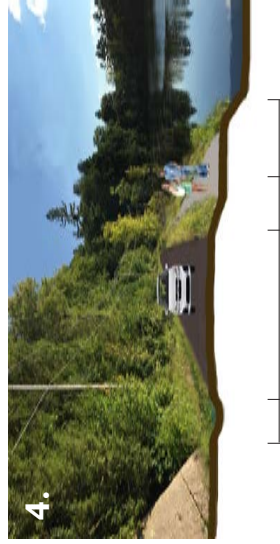
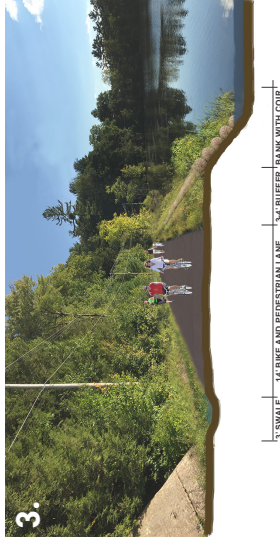
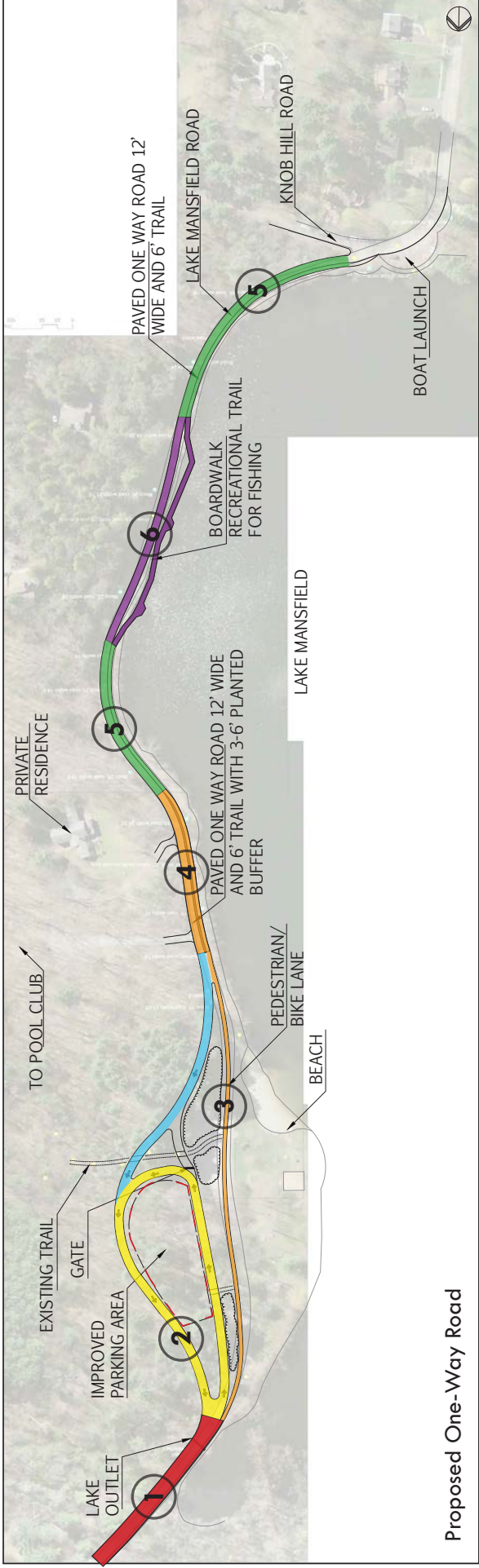
Cons

Cost Range: \$\$\$\$

- Tight points will need to be addressed (potential fill in lake)
- Wider road bed may impact either Lake and/or upland in R.O.W.
- Road still shared use
- Some loss to conservation forest for improved parking



LAKE MANSFIELD road | proposed two-way road



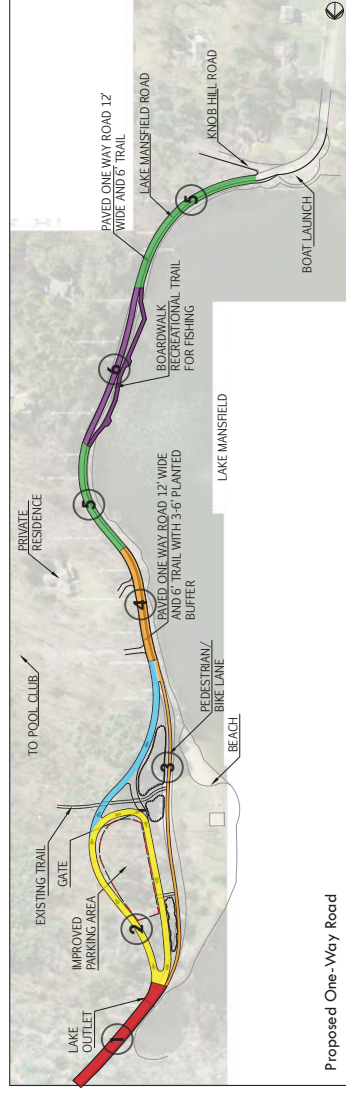
LAKE MANSFIELD road | proposed one-way road

Pros

- Wider one-way lane improves accessibility for cars + pedestrians
- Minimal fill needed
- Pedestrian path separate from car travel lane
- Lowers vehicle speed and traffic volume
- Less impervious pavement
- Boardwalk provides recreation space for fishing + walking
- Improved lake edge condition

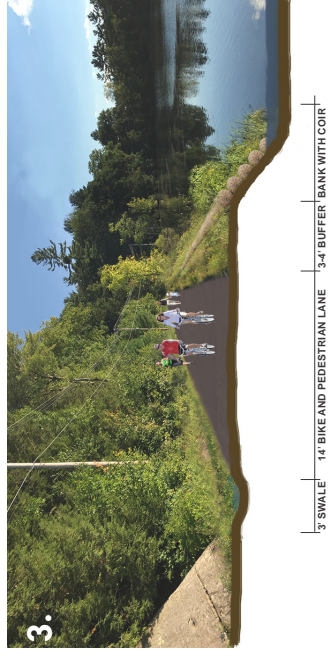
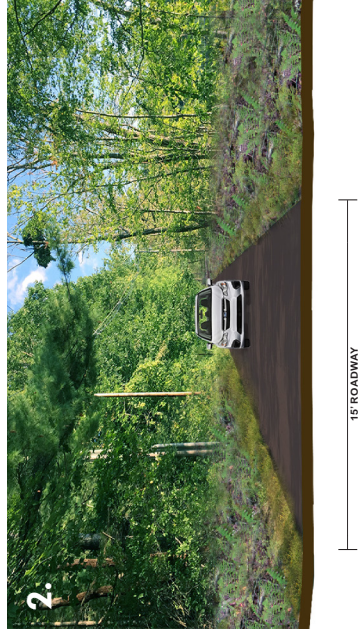
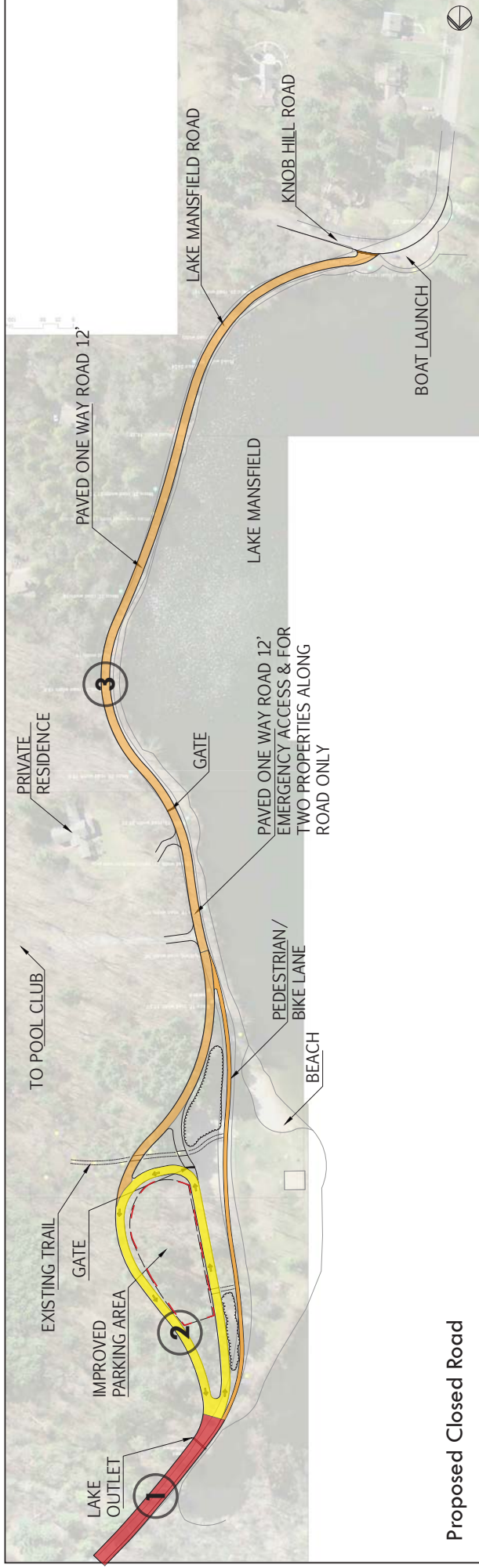
Cons

- Visitors will take alternative travel route to leave
- Greater disturbance for full length of road
- Travel restrictions to local residents



Cost Range: \$\$\$

LAKE MANSFIELD road | proposed one-road



LAKE MANSFIELD road | proposed closed road

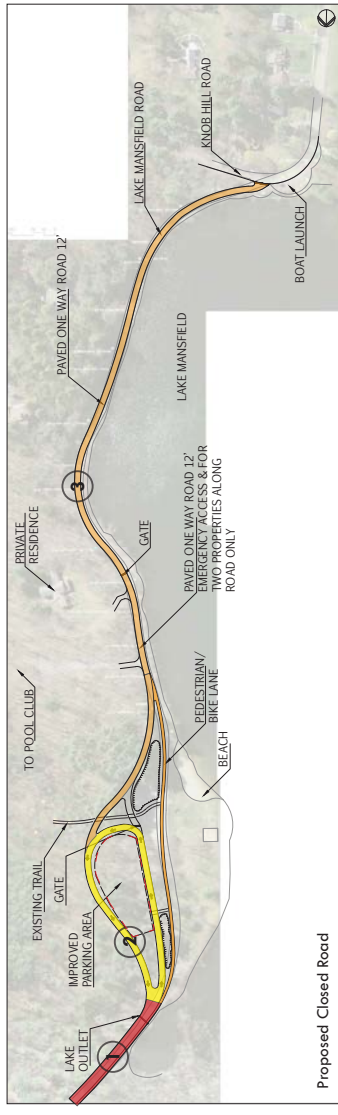
Pros

- Minimal fill needed
- Pedestrian path separate from car travel lane
- Only residences on road & emergency vehicles have access
- Less impervious pavement
- Safer travel for bikers and pedestrians
- Improved lake edge condition

Cons

- Visitors will take alternative travel route to leave
- Travel restrictions to local residents

Cost Range: \$\$



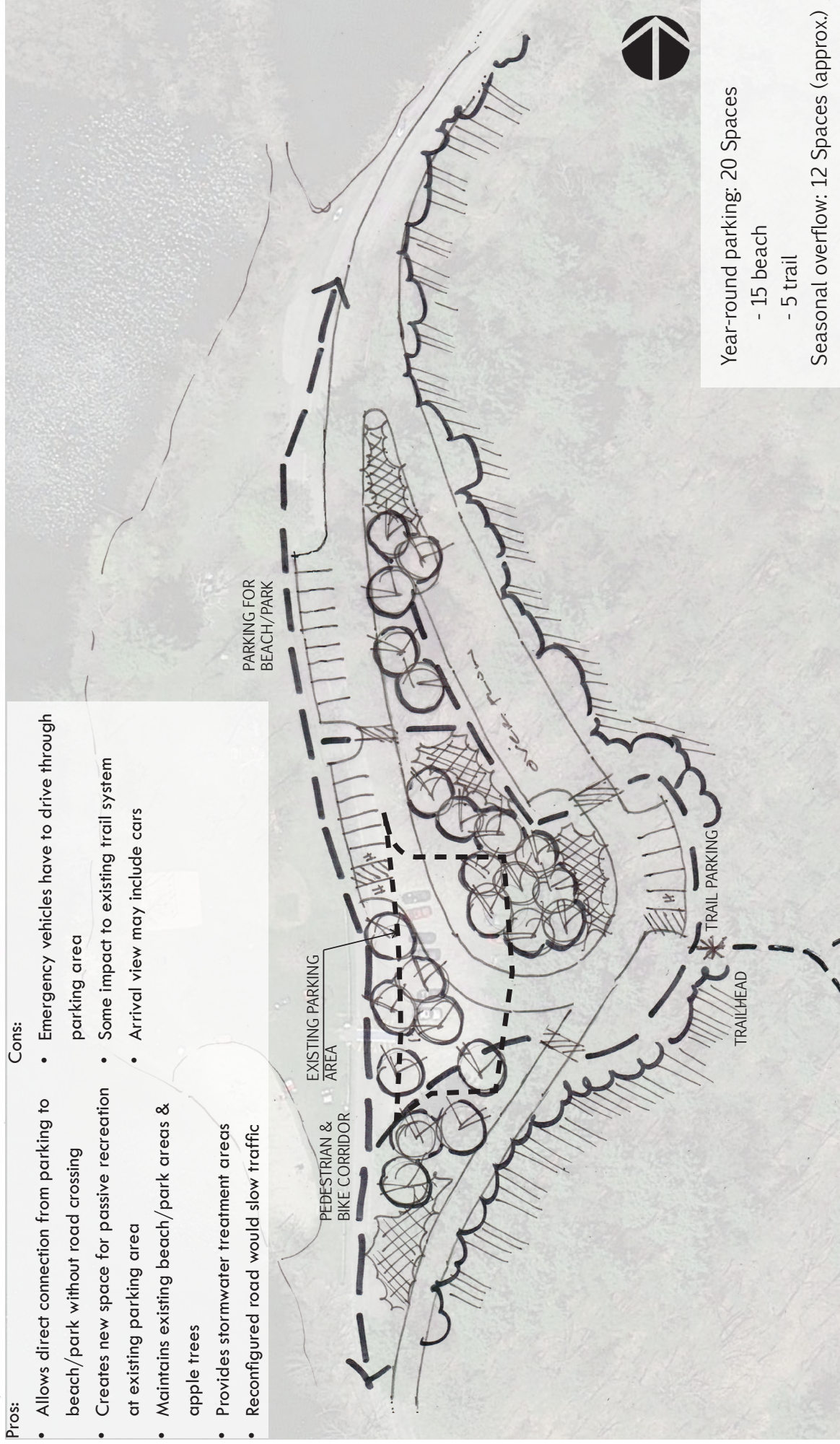
LAKE MANSFIELD road | proposed closed road

Pros:

- Allows direct connection from parking to beach/park without road crossing
- Creates new space for passive recreation at existing parking area
- Maintains existing beach/park areas & apple trees
- Provides stormwater treatment areas
- Reconfigured road would slow traffic

Cons:

- Emergency vehicles have to drive through parking area
- Some impact to existing trail system
- Arrival view may include cars



Year-round parking: 20 Spaces

- 15 beach
- 5 trail

Seasonal overflow: 12 Spaces (approx.)

LAKE MANSFIELD beach parking | option a

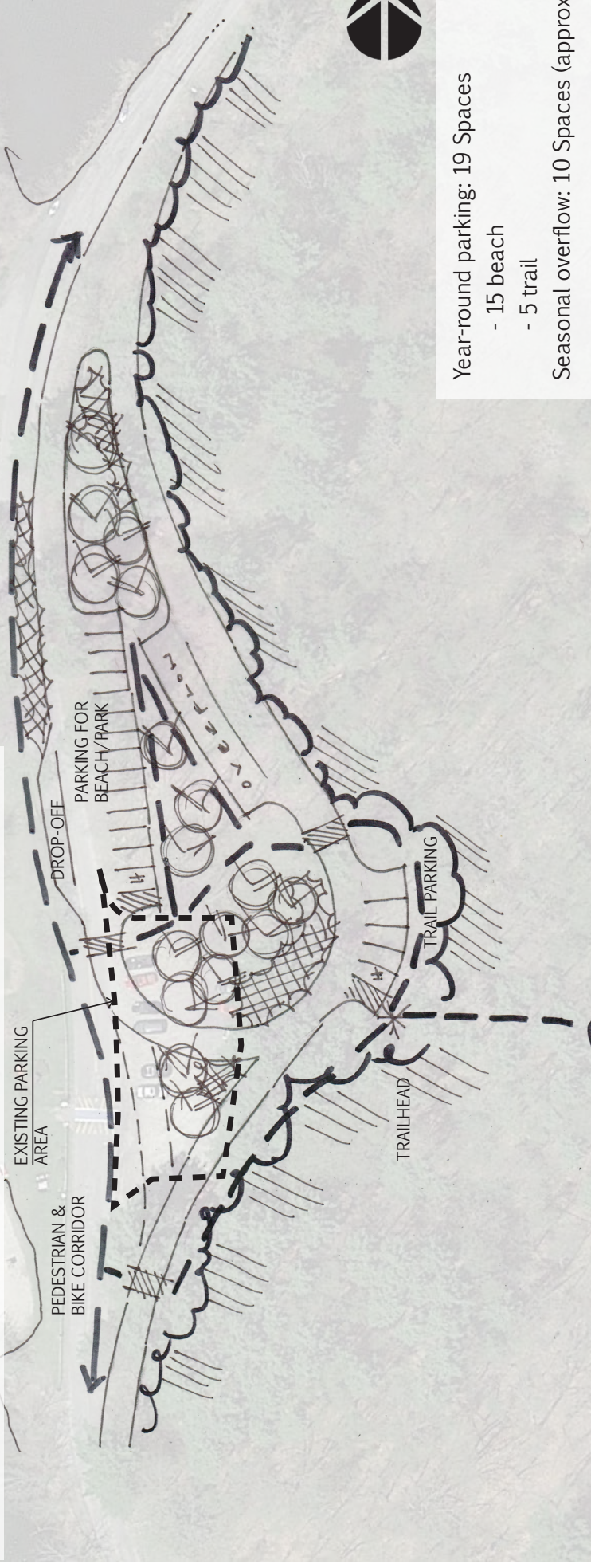
kzla

Pros:

- Drop-off only on beach side of road
- creates new space for passive recreation at existing parking area
- Maintains existing beach/park areas & apple trees
- Provides stormwater treatment areas
- Creates unobstructed view from beach to woods
- Reconfigured road would slow traffic

Cons:

- No parking on beach side means pedestrians crossing road
- Emergency vehicles have to drive through parking area
- Some impact to conservation forest
- Some impact to existing trail system



Year-round parking: 19 Spaces

- 15 beach

- 5 trail

Seasonal overflow: 10 Spaces (approx.)

LAKE MANSFIELD beach parking | option b

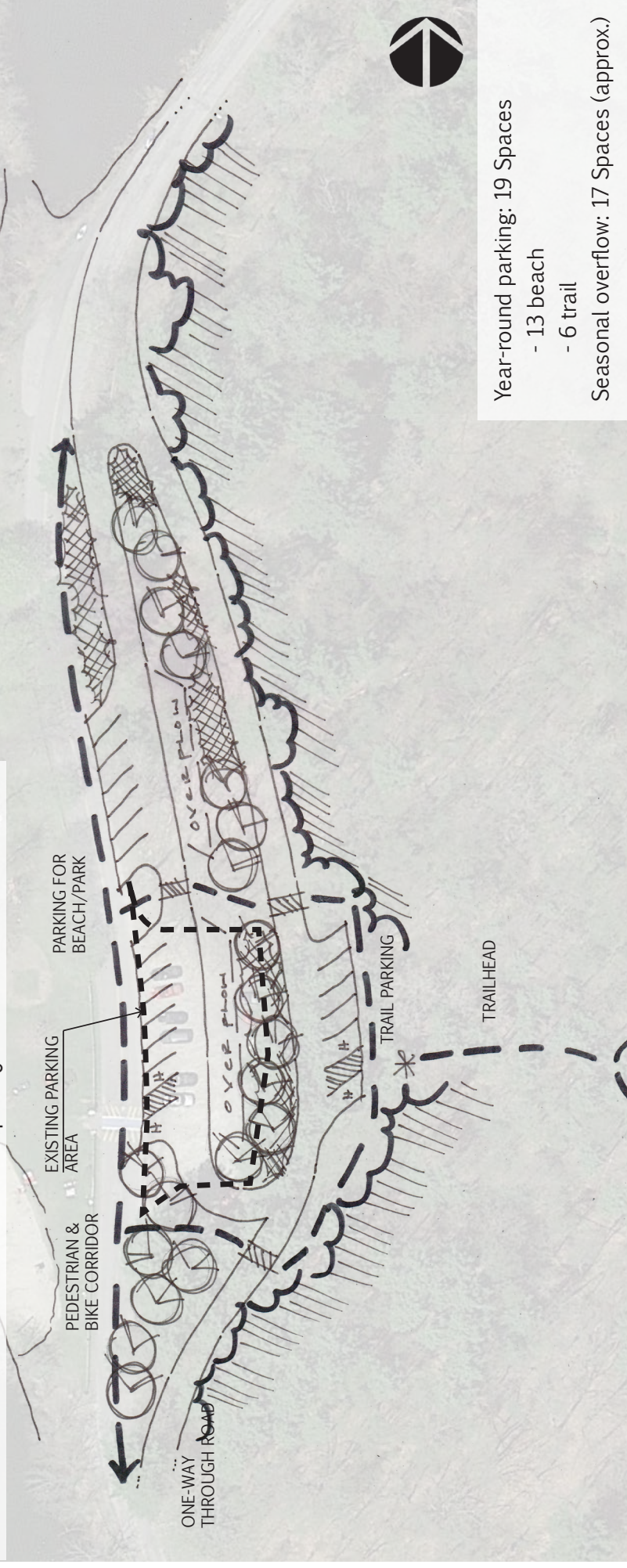
kzla

Pros:

- Allows direct connection from parking to beach/park without road crossing
- Maintains existing beach/park areas & apple trees
- Provides stormwater treatment areas
- Reconfigured road would slow traffic

Cons:

- Emergency vehicles have to drive through parking area
- Minimal impact to conservation forest
- Minimal impact to existing trail system
- Creates no new space for passive recreation
- Only works with one-way traffic through parking area



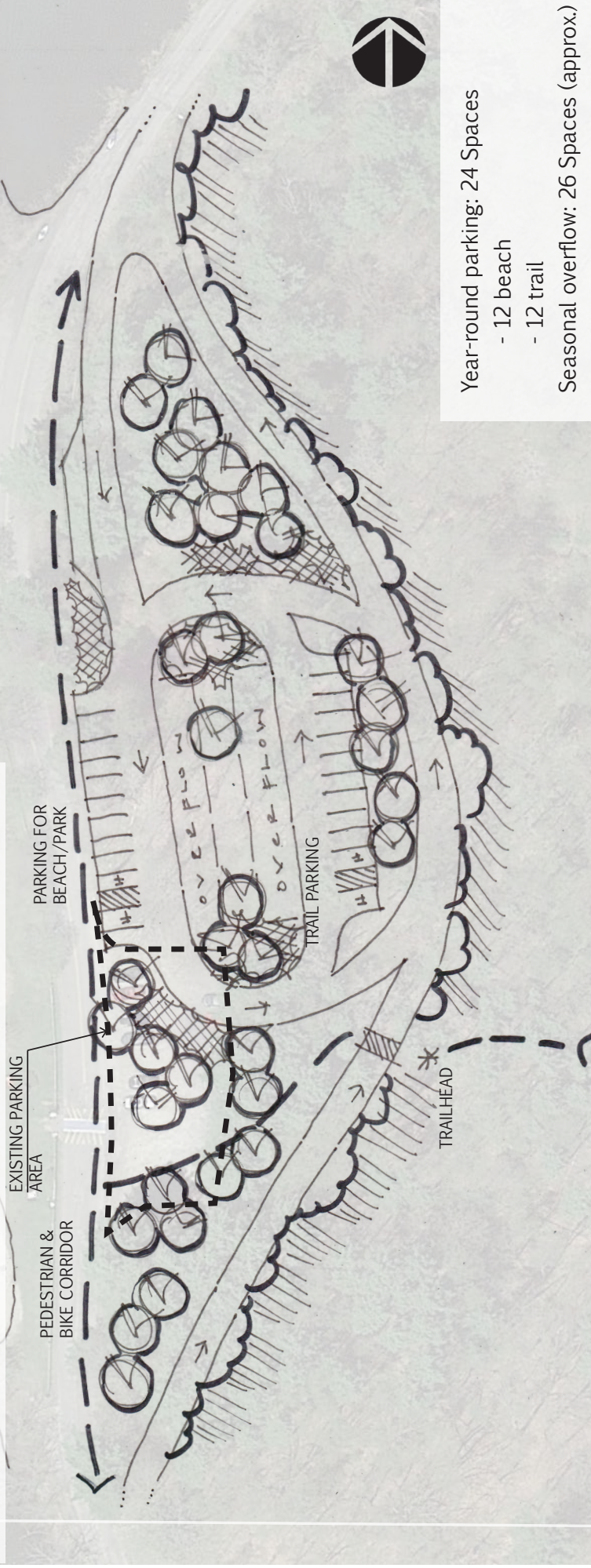
Year-round parking: 19 Spaces
 - 13 beach
 - 6 trail
 Seasonal overflow: 17 Spaces (approx.)

Pros:

- Allows direct connection from parking to beach/park without road crossing
- Creates new space for passive recreation at existing parking area
- Maintains existing beach/park areas & apple trees
- Provides stormwater treatment areas
- Drop-off on beach side of road
- Reconfigured road would slow traffic

Cons:

- Emergency vehicles have to drive through parking area
- Impacts conservation forest
- Impacts existing trail system



Year-round parking: 24 Spaces

- 12 beach

- 12 trail

Seasonal overflow: 26 Spaces (approx.)

LAKE MANSFIELD beach parking | option d

kzla

Boat Launch Parking: 7 Spaces



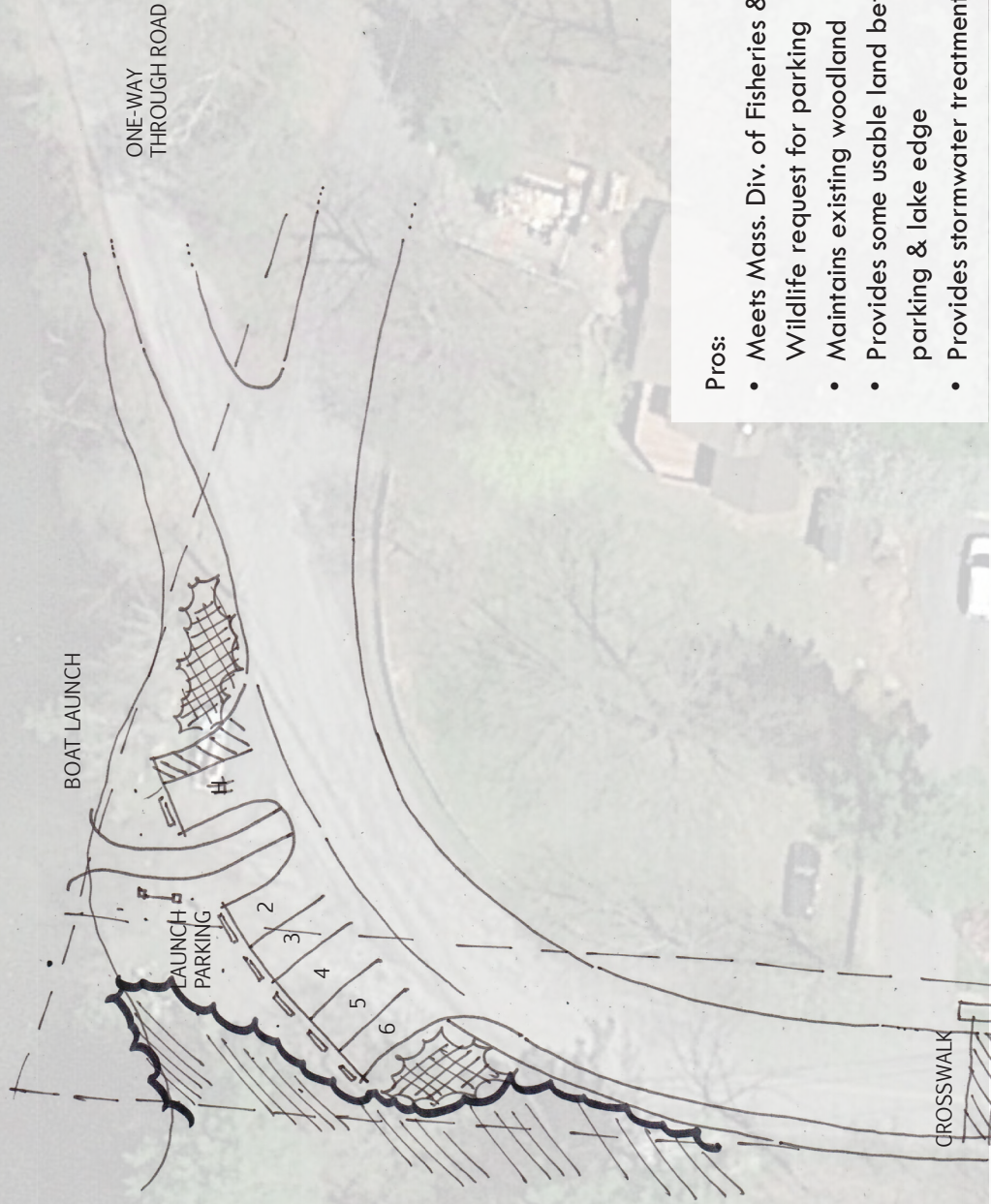
Pros:

- Creates dock for boat launch
- Meets Mass. Div. of Fisheries & Wildlife request for parking
- Maintains existing woodland
- Provides some usable land between parking & lake edge
- Provides stormwater treatment areas

Cons:

- Requires backing into road
- Eliminates trailer launch & parking

Boat Launch Parking: 6 Spaces



Pros:

- Meets Mass. Div. of Fisheries & Wildlife request for parking
- Maintains existing woodland
- Provides some usable land between parking & lake edge
- Provides stormwater treatment areas

Cons:

- Requires backing into road
- Minimized boat launch
- Eliminates trailer launch & parking

LAKE MANSFIELD boat launch | option b

Boat Launch Parking: 3 Spaces



Pros:

- Allows boat launch from trailer
- Maintains existing woodland
- Provides stormwater treatment areas
- Does not require backing into road

Cons:

- Does not meet Mass. Div. of Fisheries & Wildlife request for parking
- Eliminates trailer parking
- Provides minimal usable land between parking & lake edge

Boat Launch Parking: 6 Spaces



Pros:

- Meets Mass. Div. of Fisheries & Wildlife request for parking
- Provides minimal usable land between parking & lake edge
- Provides stormwater treatment areas

Cons:

- Minimized boat launch
- Requires some vehicles to back onto road
- Eliminates trailer launch & parking
- Reduces existing woodland edge

LAKE MANSFIELD boat launch | option d

Public Forum #3

2 March 2016

Design Studies



Existing Conditions



Existing Conditions



Existing Conditions

LAKE MANSFIELD road | existing conditions

Impact on Water Quality, Lake Health, and Habitat

- No construction disturbance to lake edge & existing habitat
- No added benefit to water quality
- No improvements to lake edge/buffer
- Neither adds nor reduces habitat

Impact on Safety for all users

- No impact

Impact on Access to and through the area

- No improvements to flooding at outlet control
- No improvements to accessibility

Construction Cost

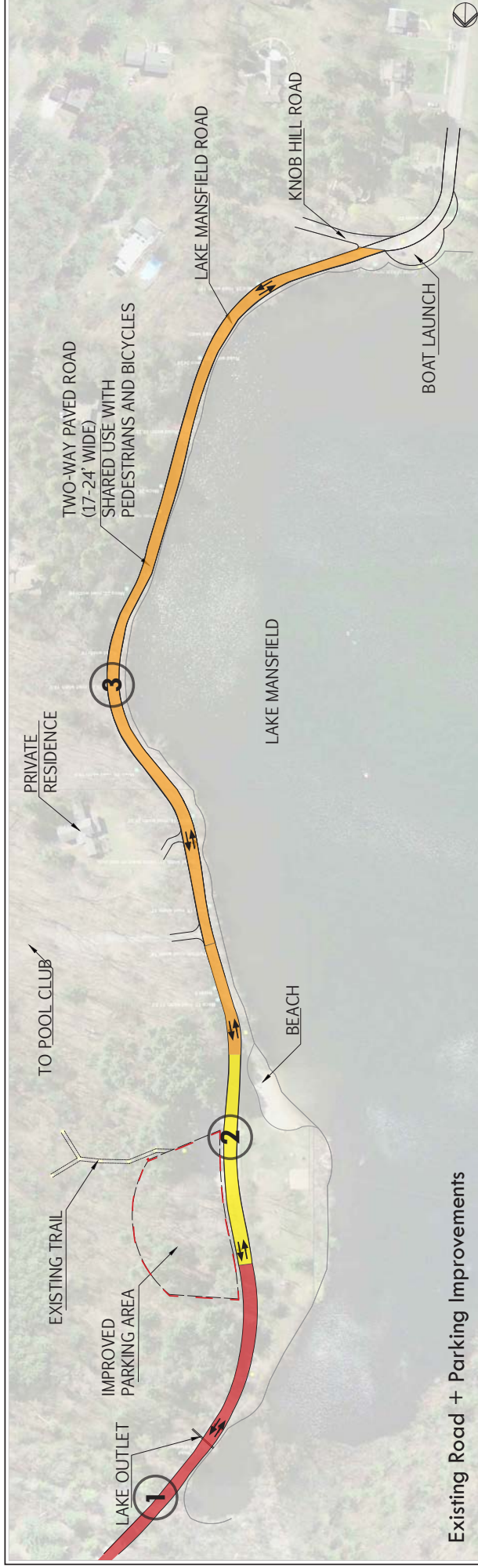
- No cost in short term (parking improvements & lake outlet control not included)
- *Existing condition will continue to deteriorate and eventually require improvements

Permitting Requirements

- No permits required

Possible Support Funding

- Not needed



Existing Conditions



Existing Conditions



Existing Conditions

LAKE MANSFIELD road | existing road + parking

Impact on Water Quality, Lake Health, and Habitat

- No construction disturbance to lake edge & existing habitat
- No added benefit to water quality
- No improvements to lake edge/buffer
- Neither adds nor reduces habitat

Impact on Safety for all users

- No impact - pedestrians walking from parkin to beach still have to cross two-way road

Impact on Access to and through the area

- No improvements to flooding at outlet control
- No improvements to accessibility for beach access

Construction Cost

- No cost in short term (parking improvements & lake outlet control not included)

*Existing roadway condition will continue to deteriorate and eventually require improvements

Permitting Requirements

- National Pollutant Discharge Elimination System (NPDES)
- Stormwater Pollution Prevention Plan (SWPPP)
- *Wetlands Protection Act / NOI permit may be required if the parking improvements occur within a buffer zone; (100 feet of bank) a WPA NOI is not anticipated to be required for repair/re-pave of existing road only.

Possible Support Funding

- Mass. Land and Water Conservation Fund
- Mass. Environmental Trust Grant Programs
- Mass. Nonpoint Source (sec 319) Program

LAKE MANSFIELD road | existing road + parking



Existing Conditions



Existing Conditions



Existing Conditions

LAKE MANSFIELD road | realigned road + parking

Impact on Water Quality, Lake Health, and Habitat

- Improvement to parking will allow treatment of stormwater/reduction in siltation of lake
- No improvements to lake edge/buffer on south shore
- Reduces forest habitat for parking
- Minimal disturbance to repair road

Impact on Safety for all users

- Road + parking is moved away from beach front
- Minimizes potential for conflict between beach goers and vehicles
- All users continue to share roadway

Impact on Access to and through the area

- Minimally increases access to beach, including accessible route
- Maintains existing access to boat launch

LAKE MANSFIELD road | realigned road + parking

Construction Cost

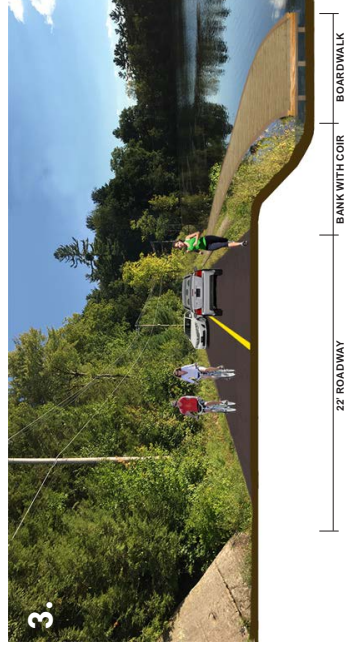
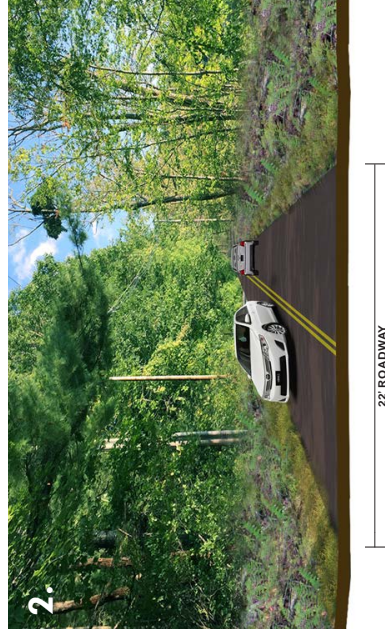
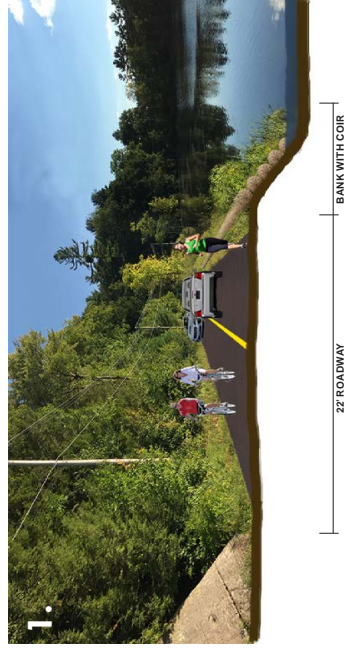
- \$ 550,000 (parking improvements & lake outlet control not included)
 - *Existing roadway condition will continue to deteriorate and eventually require improvements
- Could be a phase 1 solution prior to other improvements

Permitting Requirements

- National Pollutant Discharge Elimination System (NPDES)
- Stormwater Pollution Prevention Plan (SWPPP)
- Wetlands Protection Act / Notice of Intent to GB Conservation Commission for road work in buffer zone

Possible Support Funding

- Chapter 90
- Mass. Land and Water Conservation Fund
- Mass. Environmental Trust Grant Programs
- Mass. Nonpoint Source (sec 319) Program



LAKE MANSFIELD road | widened two-way road + parking **kzla**

Impact on Water Quality, Lake Health, and Habitat

- Some construction disturbance to lake edge & existing habitat
- Requires reduction of pollution-filtering vegetative buffer between road and lake for wider road
- Reduces forest habitat to widen road & for parking
- Boardwalk provides shade to small area of lake cooling water temperatures & provides habitat

Impact on Safety for all users

- Slows vehicles around new curve at parking area
- Minimizes potential for conflict between beach goers and vehicles
- All users continue to share roadway
- Wider roadbed may encourage an increase in traffic speeds

Impact on Access to and through the area

- Minimally increases access to beach, including accessible route
- Maintains existing access to boat launch
- Reduces length from trailhead to loop trail

Construction Cost

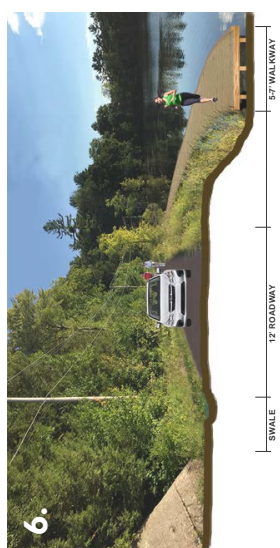
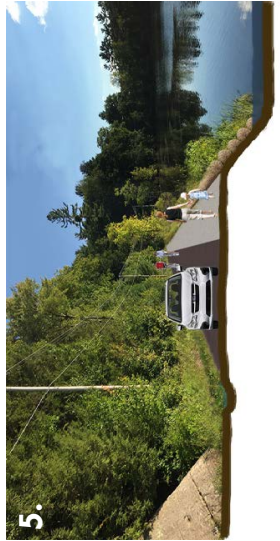
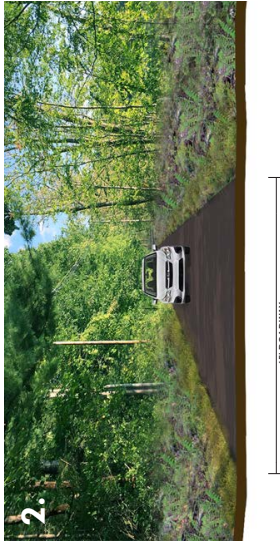
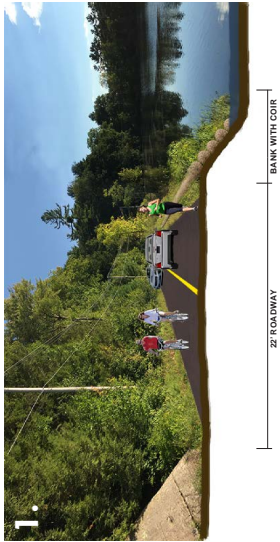
- \$ 1,350,000 (parking improvements & lake outlet control not included)

Permitting Requirements

- National Pollutant Discharge Elimination System (NPDES)
- Stormwater Pollution Prevention Plan (SWPPP)
- Wetlands Protection Act / Notice of Intent to GB Conservation Commission for road work in buffer zone
- Army Corps of Engineers required for boardwalk

Possible Support Funding

- Chapter 90
- Mass. Land and Water Conservation Fund
- Mass. Environmental Trust Grant Programs
- Mass. Nonpoint Source (sec 319) Program



LAKE MANSFIELD road | one-way road + parking

Impact on Water Quality, Lake Health, and Habitat

- Minimal construction disturbance to lake edge & existing habitat (temporary)
- Improvement to parking will allow treatment of stormwater/reduction in siltation of lake
- Increases pollution-filtering vegetative buffer between road and lake
- Boardwalk & vegetative buffer provides shade to small area of lake cooling water temperatures
- Reduces forest habitat for parking

Impact on Safety for all users

- Wider drive lane improves driving conditions
- Increases safety by making vehicular flow more predictable and by adding designated path for pedestrians
- Minimizes potential for conflict between recreation users and vehicles

Impact on Access to and through the area

- Increases access between parking and beach, including accessible route
- Pedestrian trails & boardwalk increase access around/to water
- Reduces length from trailhead to loop trail

LAKE MANSFIELD road | one-way road + parking

Construction Cost

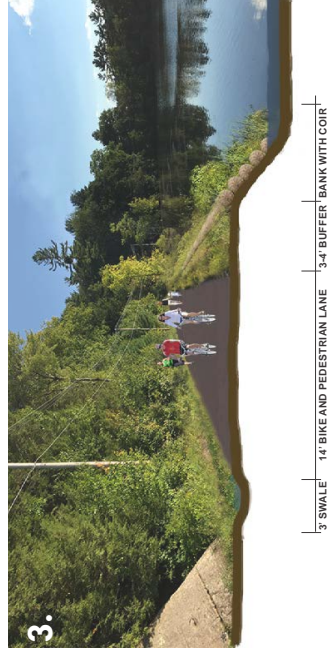
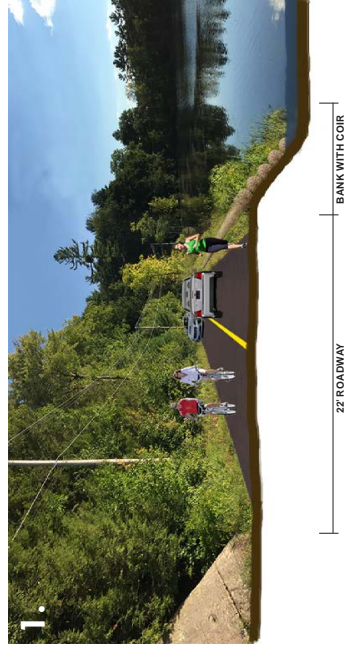
- \$ 1,250,000 (parking improvements & lake outlet control not included)

Permitting Requirements

- National Pollutant Discharge Elimination System (NPDES)
- Stormwater Pollution Prevention Plan (SWPPP)
- Wetlands Protection Act / Notice of Intent to GB Conservation Commission for road work in buffer zone
- Army Corps of Engineers required for boardwalk

Possible Support Funding

- Chapter 90
- Mass. Land and Water Conservation Fund
- Mass. Environmental Trust Grant Programs
- Mass. Nonpoint Source (sec 319) Program



LAKE MANSFIELD road | closed road + parking

Impact on Water Quality, Lake Health, and Habitat

- Minimal construction disturbance to lake edge & existing habitat (temporary)
- Reduces polluted runoff from pavement of parking
- Increases pollution-filtering vegetative buffer between road and lake
- Improvement to parking will allow treatment of stormwater/reduction in siltation of lake
- Vegetative buffer provides shade to small area of lake cooling water temperatures
- Reduces forest habitat for parking

Impact on Safety for all users

- Increases safety by eliminating regular vehicles and creating recreation path
- Regular vehicle traffic eliminated between recreation area parking and boat launch
- Minimizes potential for conflict between recreation users and vehicles at parking

Impact on Access to and through the area

- Minimally increases access between parking and beach, including accessible route
- Closed road increases pedestrian access around water
- Pedestrian trails & boardwalk increase access around/to water
- Reduces length from trailhead to loop trail

LAKE MANSFIELD road | closed road + parking

Construction Cost

- \$ 900,000 (parking improvements & lake outlet control not included)

Permitting Requirements

- National Pollutant Discharge Elimination System (NPDES)
- Stormwater Pollution Prevention Plan (SWPPP)
- Wetlands Protection Act / Notice of Intent to GB Conservation Commission for road work in buffer zone
- Army Corps of Engineers required for boardwalk

Possible Support Funding

- Chapter 90
- Mass. Land and Water Conservation Fund
- Mass. Environmental Trust Grant Programs
- Mass. Nonpoint Source (sec 319) Program

LAKE MANSFIELD road | closed road + parking

OPTION:**IMPACT ON:****RESOURCES:**

	Water Quality	Habitat (Lake)	Safety	Pedestrian Access	Vehicular Access	Cost (Road)	Permitting	Funding opportunities
Existing Conditions	no change	no change	no change	no change	no change	Ø	No Permitting	N/A
Existing Two-Way Road + Parking Impr.	no change	no change	no change	no change	no change	Ø	NPDES & SWPPP, WPA NOI*	N/A
Realigned Two-Way Road + Parking Impr.	minor benefit	minor change	minor increase	minimal improvement	minor change	\$0.55M	WPA NOI, NPDES & SWPPP	Chapter 90
Widened Two-Way Road + Parking Impr.	minor benefit	habitat reduction	minimal increase	minimal improvement	increase in access	\$1.35M	WPA NOI, NPDES & SWPPP, ACOE*	Chapter 90
One-Way Road + Parking Impr.	significant benefit	increase	significant increase	moderate improvement	decrease in access	\$1.25M	WPA NOI, NPDES & SWPPP, ACOE*	Chapter 90 Mass.Land and Water Conservation Fund
Closed Road + Parking Imprv.	significant benefit	increase	best increase	significant improvement	decrease in access	\$0.99M	WPA NOI, NPDES & SWPPP, ACoE**	Mass.Land and Water Conservation Fund

* WPA NOI permit may be required if the parking improvements occur within a buffer zone (100 feet of bank); a WPA NOI is not anticipated to be required for repair/re-pave of existing road only.
** ACoE only required for options with boardwalk



LAKE MANSFIELD recreation area parking

Impact on Water Quality, Lake Health, and Habitat	Construction Cost
<ul style="list-style-type: none"> • No improvements to treatment of stormwater/reduction in sedimentation of lake • No impact to forest habitat 	<ul style="list-style-type: none"> • Ø
Impact on Safety for all users	Permitting Requirements
<ul style="list-style-type: none"> • Requires road crossing from parking to beach 	<ul style="list-style-type: none"> • No permitting required
Impact on Access to and through the area	Possible Support Funding
<ul style="list-style-type: none"> • No accessible route from parking to beach 	<ul style="list-style-type: none"> • None needed

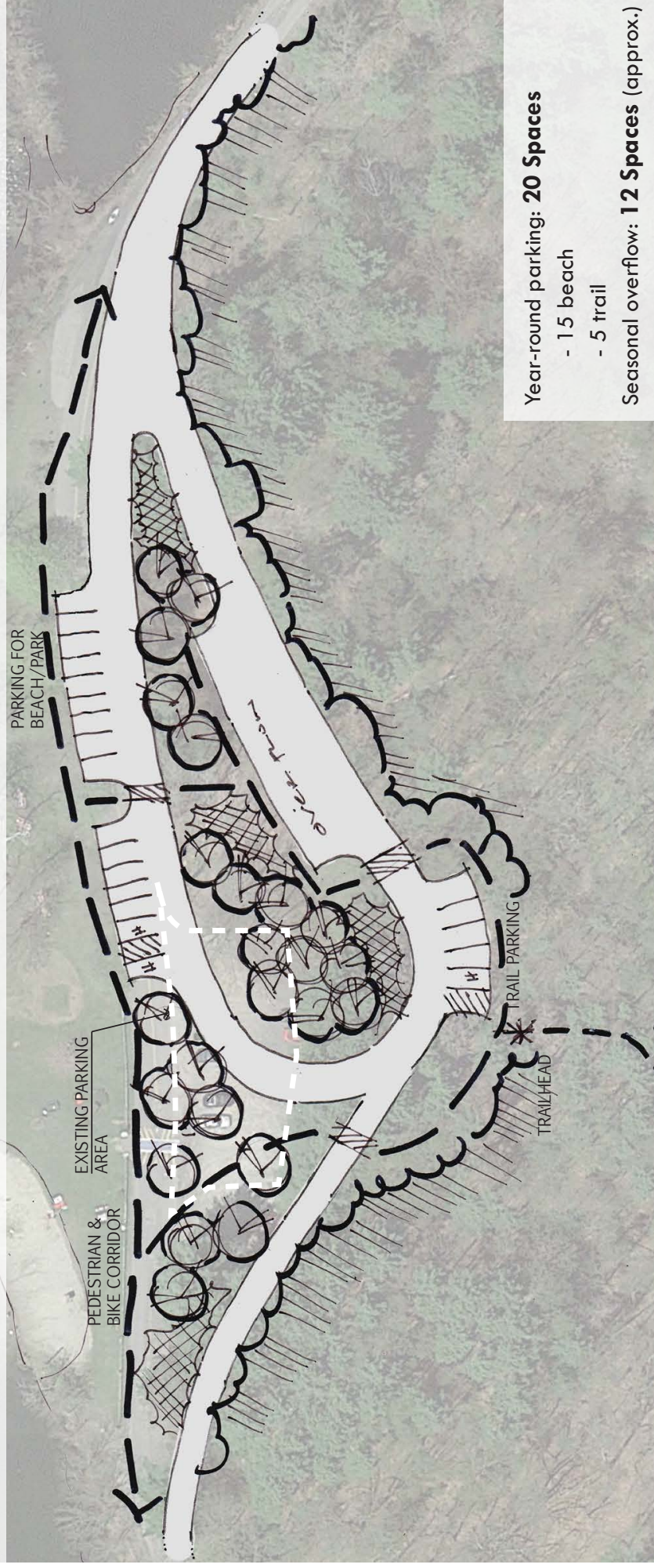
Pros:

- Allows direct connection from parking to beach/park without road crossing
- Creates new space for passive recreation at existing parking area
- Maintains existing beach/park areas & apple trees
- Provides stormwater treatment areas

Cons:

- Reconfigured road would slow traffic
- Dedicated trail parking

- Emergency vehicles have to drive through parking area
- Some impact to existing trail system
- Arrival view may include cars



Impact on Water Quality, Lake Health, and Habitat

- Improvement to parking will allow treatment of stormwater/reduction in siltation of lake
- Reduces forest habitat for parking (approx. 1.65 acres)

Impact on Safety for all users

- Minimizes potential for conflict between recreation users and vehicles

Impact on Access to and through the area

- Increases access between parking and beach, including accessible route
- Reduces length from trailhead to loop trail
- Emergency vehicles must drive through parking area

Construction Cost

- \$ 550,000

Permitting Requirements

- None Required

Possible Support Funding

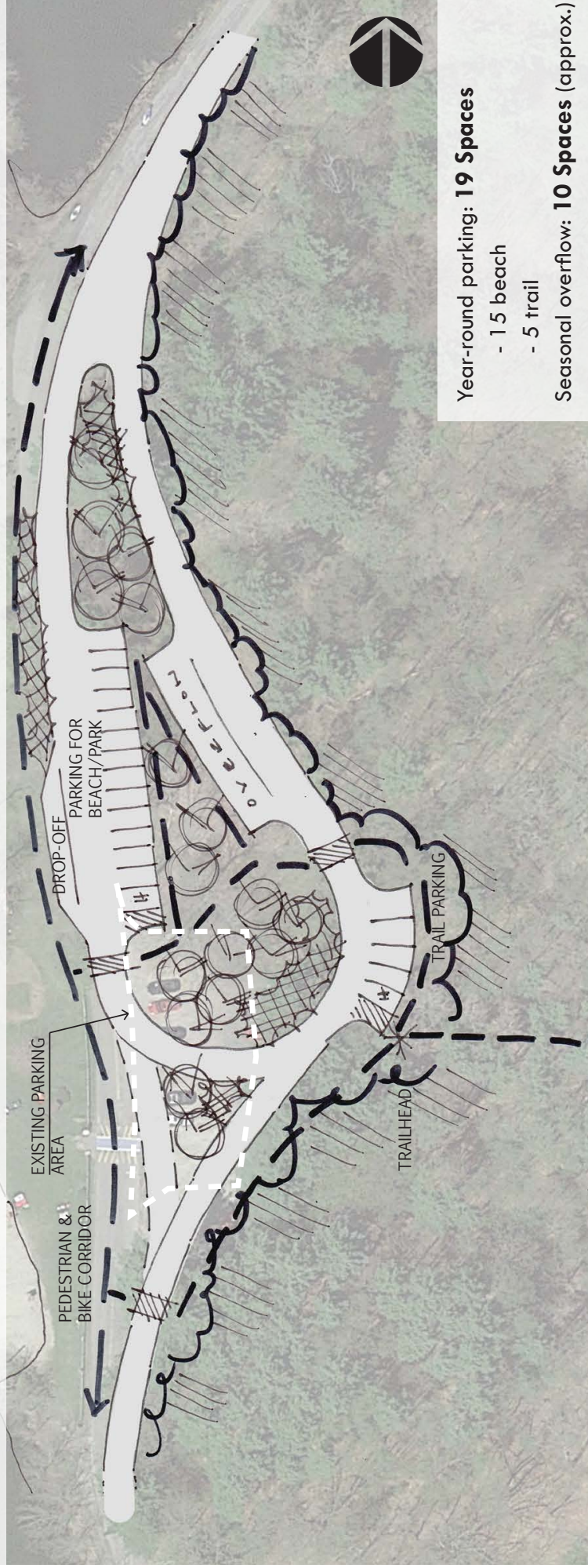
- Parkland Acquisitions and Renovations for Communities (PARC) Grant
- Field Pond Foundation
- LL Bean's Charitable Giving Program
- Copeland Family Foundation
- Nicholas B. Ottaway Foundation
- Acres for America
- Nancy Foss Heath and Richard B. Heath Educational, Cultural, and Environmental Foundation
- Verrill Foundation

Pros:

- Drop-off only on beach side of road creates new space for passive recreation at existing parking area
- Maintains existing beach/park areas & apple trees
- Provides stormwater treatment areas
- Creates unobstructed view from beach to woods

Cons:

- Reconfigured road would slow traffic
- dedicated trail parking
- No parking on beach side means pedestrians crossing road
- Emergency vehicles have to drive through parking area
- Some impact to conservation forest
- Some impact to existing trail system



Year-round parking: **19 Spaces**

- 15 beach
- 5 trail

Seasonal overflow: **10 Spaces** (approx.)

LAKE MANSFIELD recreation area parking | option b

Impact on Water Quality, Lake Health, and Habitat

- Improvement to parking will allow treatment of stormwater/reduction in siltation of lake
- Least amount of disturbance of forest habitat for parking compared to other options (approx. 1.3 acres)

Impact on Safety for all users

- Drop-off reduces pedestrian/vehicle conflict
- Pedestrians must cross road to access beach from parking

Impact on Access to and through the area

- Increases access between parking and beach
- Provides direct access to trail from parking
- Reduces length from trailhead to loop trail
- Emergency vehicles must drive through parking area

Construction Cost

- \$ 475,000

Permitting Requirements

- Notice of Intent to GB Conservation Commission for road work in buffer zone + MESA
- Stormwater Pollution Prevention Plan (SWPPP)
- National Pollutant Discharge Elimination System (NPDES)
- Massachusetts Environmental Permitting Act (MEPA)

*If 5,000+ sf of wetland is altered

Possible Support Funding

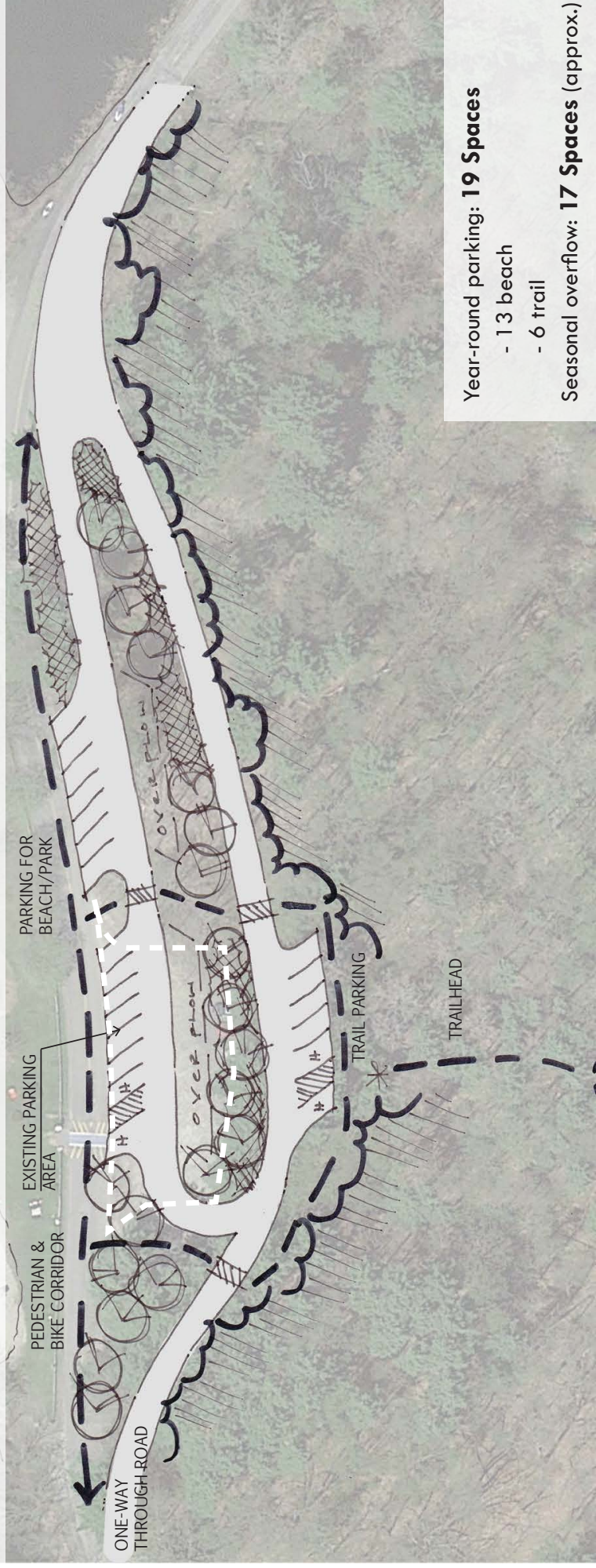
- Parkland Acquisitions and Renovations for Communities (PARC) Grant
- Field Pond Foundation
- LL Bean's Charitable Giving Program
- Copeland Family Foundation
- Nicholas B. Ottaway Foundation
- Acres for America
- Nancy Foss Heath and Richard B. Heath Educational, Cultural, and Environmental Foundation
- Verrill Foundation

Pros:

- Allows direct connection from parking to beach/park without road crossing
- Maintains existing beach/park areas & apple trees
- Provides stormwater treatment areas
- Reconfigured road would slow traffic
- dedicated trail parking

Cons:

- Emergency vehicles have to drive through parking area
- Minimal impact to conservation forest
- Minimal impact to existing trail system
- Creates no new space for passive recreation
- Only works with one-way traffic through parking area



Impact on Water Quality, Lake Health, and Habitat

- Improvement to parking will allow treatment of stormwater/reduction in siltation of lake
- Reduces forest habitat for parking (approx. 1.5 acres)

Impact on Safety for all users

- Minimizes potential for conflict between recreation users and vehicles

Impact on Access to and through the area

- Increases access between parking and beach, including accessible route
- Provides direct access to trail from parking
- Reduces length from trailhead to loop trail, but less so than other options
- Emergency vehicles must drive through parking area

Construction Cost

- \$ 500,000

Permitting Requirements

- Notice of Intent to GB Conservation Commission for road work in buffer zone + MESA
- Stormwater Pollution Prevention Plan (SWPPP)
- National Pollutant Discharge Elimination System (NPDES)
- Massachusetts Environmental Permitting Act (MEPA)

*If 5,000+ sf of wetland is altered

Possible Support Funding

- Parkland Acquisitions and Renovations for Communities (PARC) Grant
- Field Pond Foundation
- LL Bean's Charitable Giving Program
- Copeland Family Foundation
- Nicholas B. Ottaway Foundation
- Acres for America
- Nancy Foss Heath and Richard B. Heath Educational, Cultural, and Environmental Foundation
- Verrill Foundation

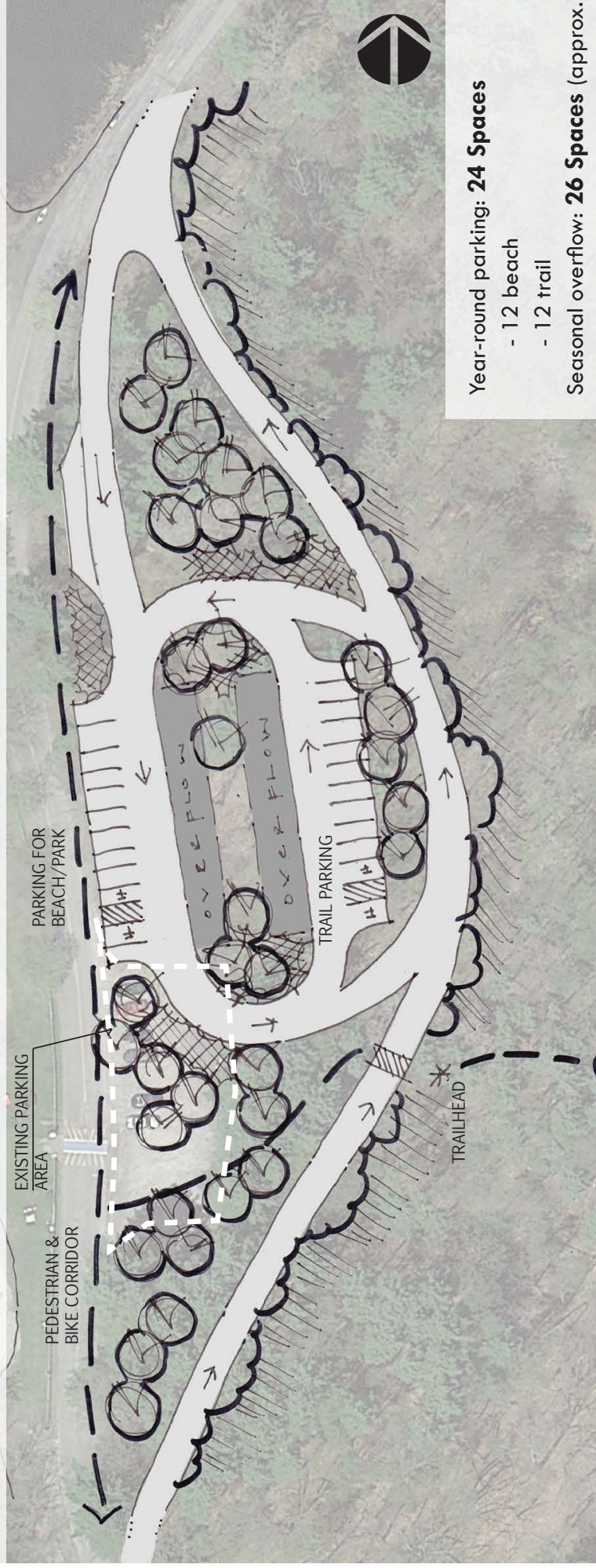
Pros:

- Allows direct connection from parking to beach/park without road crossing
- Creates new space for passive recreation at existing parking area
- Maintains existing beach/park areas & apple trees
- Provides stormwater treatment areas
- Drop-off on beach side of road

Cons:

- Reconfigured road would slow traffic
- Dedicated trail parking

- Emergency vehicles have to drive through parking area
- Impacts conservation forest
- Impacts existing trail system



Impact on Water Quality, Lake Health, and Habitat

- Improvement to parking will allow treatment of stormwater/reduction in siltation of lake
- Largest decrease of forest habitat for parking (approx. 1.7 acres)

Impact on Safety for all users

- Minimizes potential for conflict between recreation users and vehicles
- Drop-off reduces pedestrian/vehicle conflict

Impact on Access to and through the area

- Indirect access to trail from parking
- Largest decrease of trail length

Construction Cost

- \$ 623,000

Permitting Requirements

- Notice of Intent to GB Conservation Commission for road work in buffer zone + MESA
- Stormwater Pollution Prevention Plan (SWPPP)
- National Pollutant Discharge Elimination System (NPDES)
- Massachusetts Environmental Permitting Act (MEPA)

*If 5,000+ sf of wetland is altered

Possible Support Funding

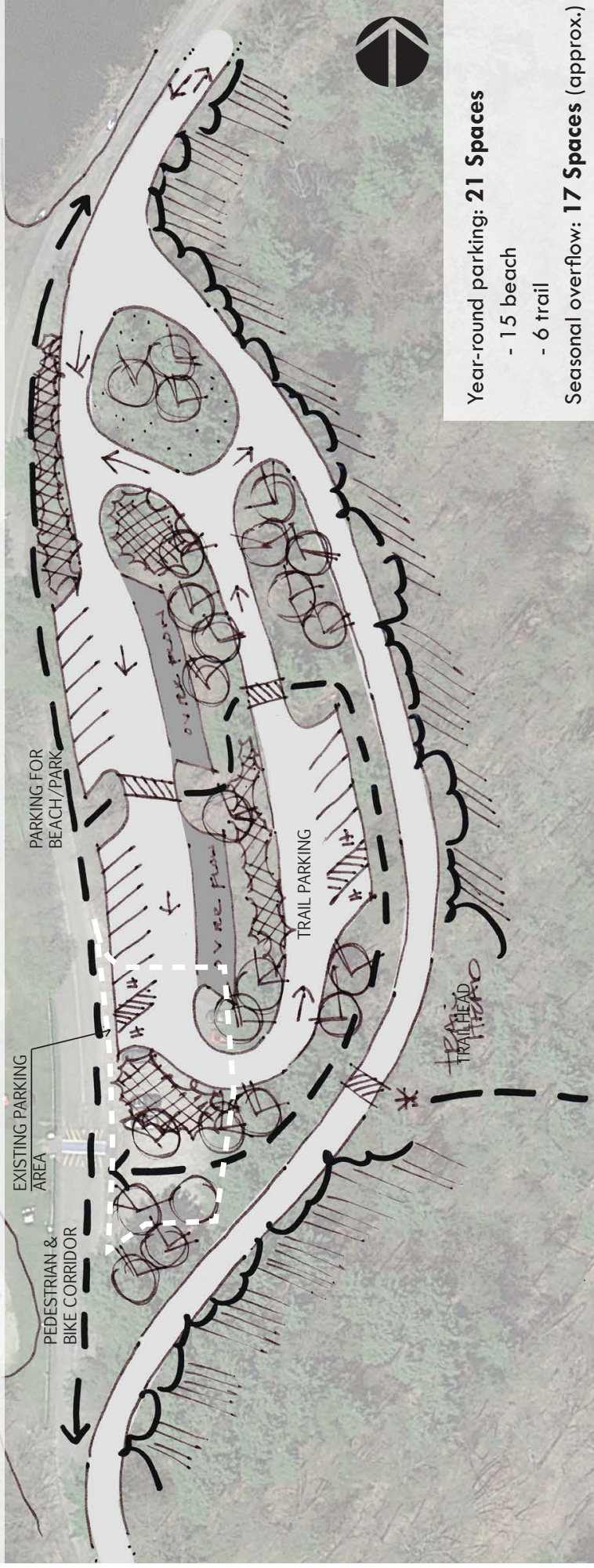
- Parkland Acquisitions and Renovations for Communities (PARC) Grant
- Field Pond Foundation
- LL Bean's Charitable Giving Program
- Copeland Family Foundation
- Nicholas B. Ottaway Foundation
- Acres for America
- Nancy Foss Heath and Richard B. Heath Educational, Cultural, and Environmental Foundation
- Verrill Foundation

Pros:

- Allows direct connection from parking to beach/park without road crossing
- Creates new minimal space for passive recreation at existing parking area
- Maintains existing beach/park areas & apple trees
- Provides stormwater treatment areas

Cons:

- Impacts conservation forest
- Impacts existing trail system
- Only works with one-way traffic through parking area
- Trail parking has to cross road to reach trail head



Year-round parking: **21 Spaces**

- 15 beach
- 6 trail

Seasonal overflow: **17 Spaces** (approx.)

Impact on Water Quality, Lake Health, and Habitat

- Improvement to parking will allow treatment of stormwater/reduction in siltation of lake
- Some reduction of forest habitat for parking (approx. 2.4 acres)

Impact on Safety for all users

- Minimizes potential for conflict between recreation users and vehicles

Impact on Access to and through the area

- Indirect access to trail from parking
- Reduces length from trailhead to loop trail

Construction Cost

- \$ 634,000

Permitting Requirements

- Notice of Intent to GB Conservation Commission for road work in buffer zone + MESA
- Stormwater Pollution Prevention Plan (SWPPP)
- National Pollutant Discharge Elimination System (NPDES)
- Massachusetts Environmental Permitting Act (MEPA)*

*If 5,000+ sf of wetland is altered

Possible Support Funding

- Parkland Acquisitions and Renovations for Communities (PARC) Grant
- Field Pond Foundation
- LL Bean's Charitable Giving Program
- Copeland Family Foundation
- Nicholas B. Ottaway Foundation
- Acres for America
- Nancy Foss Heath and Richard B. Heath Educational, Cultural, and Environmental Foundation
- Verrill Foundation

OPTION:

IMPACT ON:

RESOURCES:

	Water Quality	Habitat (Forest clearing)	Safety	Pedestrian Access	Vehicular Access	Cost (Parking)	Permitting	Funding opportunities
Option a	improved	1.65 acres	minimizes conflict	improved	road through parking	\$550K	none	*Applicable to all parking options: <ul style="list-style-type: none">• Parkland Acquisitions and Renovations for Communities (PARC) Grant• Field Pond Foundation• LL Bean's Charitable Giving Program• Copeland Family Foundation• Nicholas B. Ottaway Foundation• Acres for America• Nancy Foss Heath and Richard B. Heath Educational, Cultural, and Environmental Foundation• Verrill Foundation
Option b	improved	1.3 acres	somewhat minimizes conflict	improved	road through parking	\$475K	NOI + MESA SWPPP, NPDES, MEPA*	
Option c	improved	1.5 acres	minimizes conflict	improved	road through parking	\$500K	NOI + MESA SWPPP, NPDES, MEPA*	
Option d	improved	1.7 acres	minimizes conflict	improved	road bypasses parking	\$623K	NOI + MESA SWPPP, NPDES, MEPA*	
Option e	improved	2.4 acres	minimizes conflict	improved	road bypasses parking	\$634K	NOI + MESA SWPPP, NPDES, MEPA*	



LAKE MANSFIELD boat launch

kzla

LAKE MANSFIELD

DOCK/BOAT
LAUNCH

LAKE MANSFIELD ROAD

NOB HILL ROAD

LAUNCH
PARKING

CROSSWALK

Boat Launch Parking: 7 Spaces

Pros:

- Creates dock for boat launch
- Meets Mass. Div. of Fisheries & Wildlife request for parking
- Maintains existing woodland
- Provides some usable land between parking & lake edge
- Provides stormwater treatment areas

Cons:

- Requires backing into road
- Eliminates trailer launch & parking

LAKE MANSFIELD boat launch | option a

kzla

Impact on Water Quality, Lake Health, and Habitat

- Improvements allow treatment of stormwater/reduction in siltation of lake
- No effect on forest habitat for parking

Impact on Safety for all users

- Clarifies pedestrian and vehicular space
- Creates conflict for vehicles backing out into road

Impact on Access to and through the area

- Creates additional parking
- Maintains general use space

Construction Cost

- \$ 243,500

Permitting Requirements

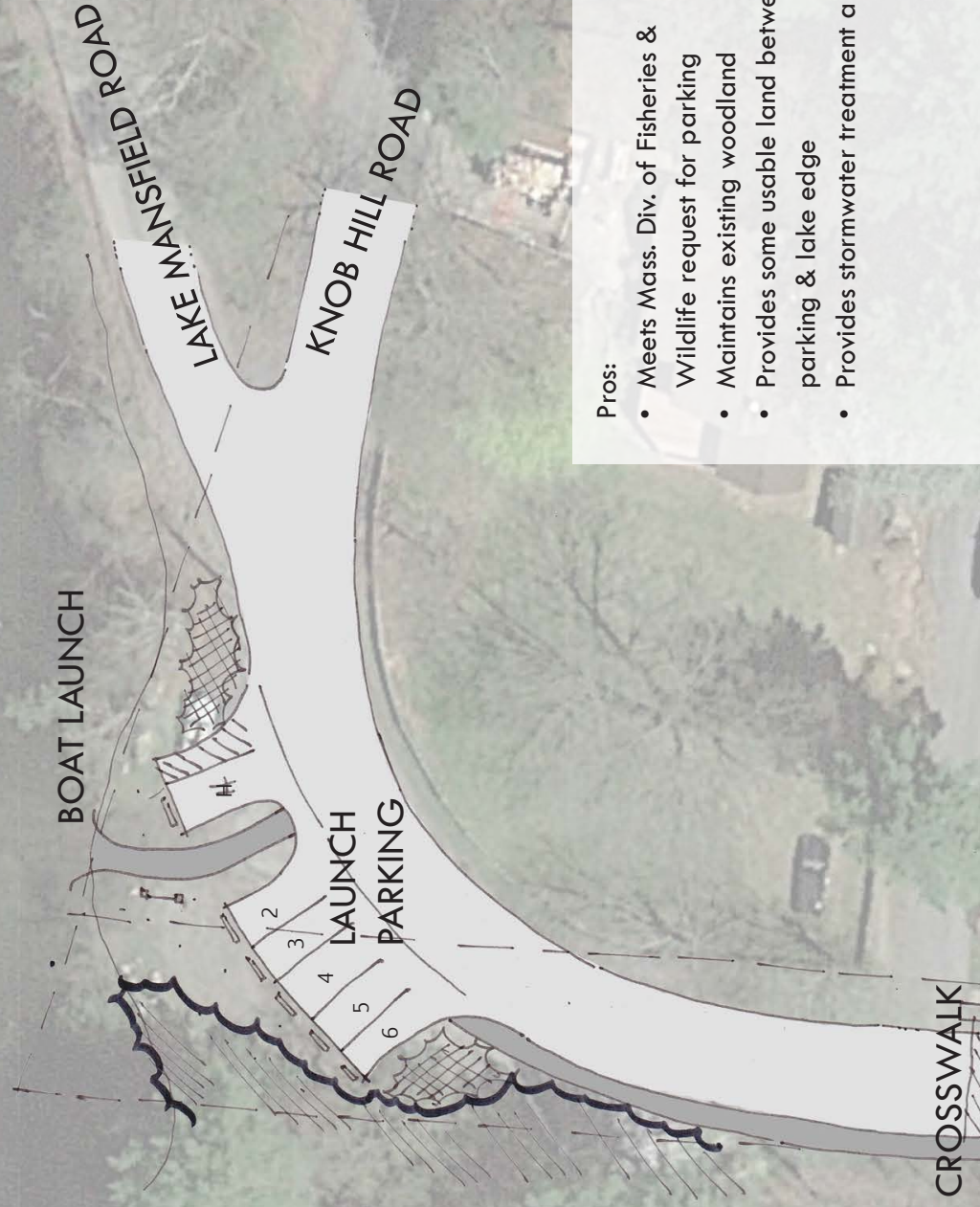
- Notice of Intent to GB Conservation Commission for road work in buffer zone
- Stormwater Pollution Prevention Plan (SWPPP)
- Army Corps of Engineers (for dock)

Possible Support Funding

- Parkland Acquisitions and Renovations for Communities (PARC) Grant
- Field Pond Foundation
- LL Bean's Charitable Giving Program
- Copeland Family Foundation
- Nicholas B. Ottaway Foundation
- Acres for America
- Nancy Foss Heath and Richard B. Heath Educational, Cultural, and Environmental Foundation
- Verrill Foundation

LAKE MANSFIELD

Boat Launch Parking: 6 Spaces



Pros:

- Meets Mass. Div. of Fisheries & Wildlife request for parking
- Maintains existing woodland
- Provides some usable land between parking & lake edge
- Provides stormwater treatment areas

Cons:

- Requires backing into road
- Minimized boat launch
- Eliminates trailer launch & parking

LAKE MANSFIELD boat launch | option b

Impact on Water Quality, Lake Health, and Habitat

- Improvements will allow treatment of stormwater/reduction in siltation of lake
- No effect on forest habitat for parking

Impact on Safety for all users

- Clarifies pedestrian and vehicular space
- Creates conflict for vehicles backing out into road

Impact on Access to and through the area

- Adds parking access
- Maintains general use space

Construction Cost

- \$ 215,500

Permitting Requirements

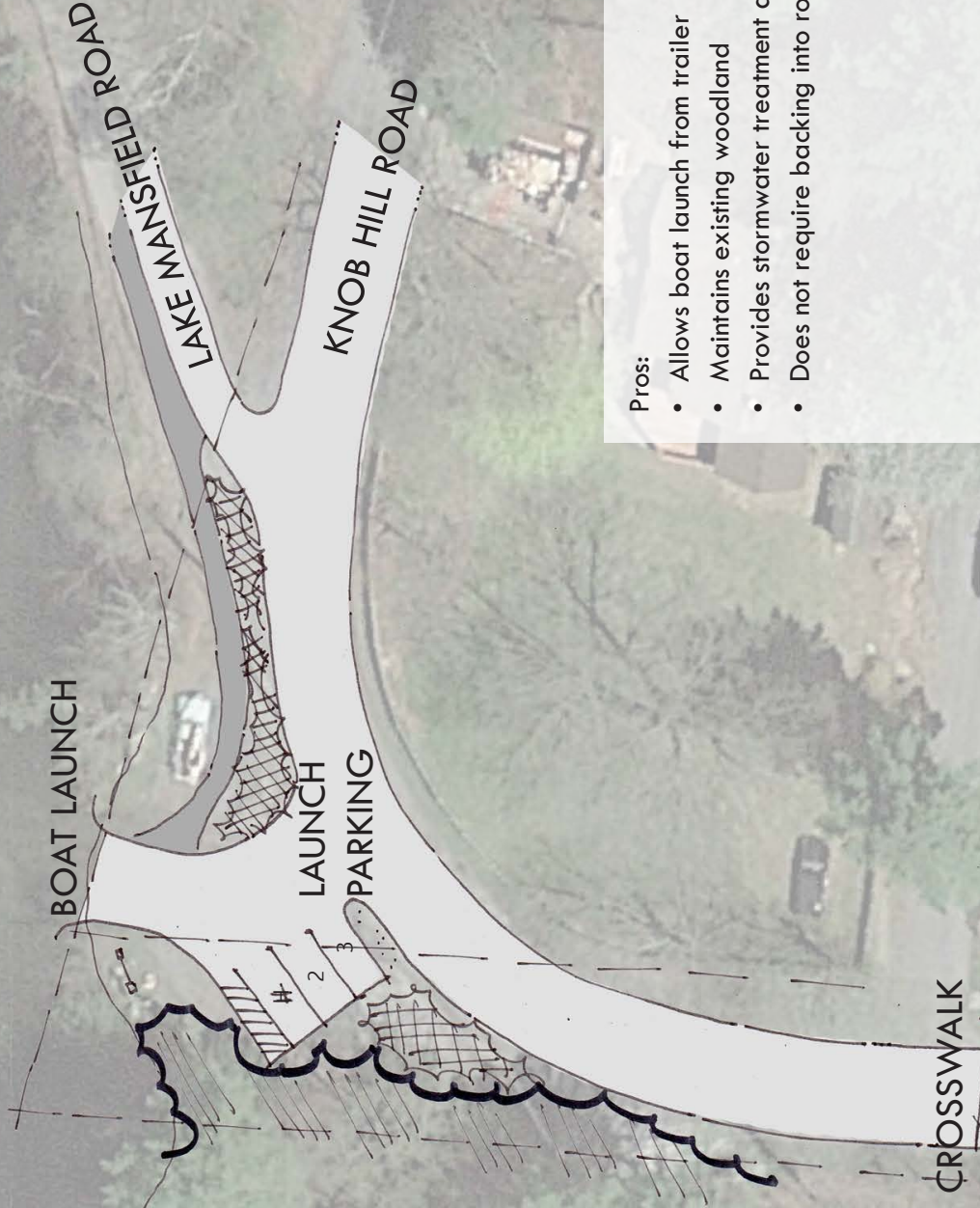
- Notice of Intent to GB Conservation Commission for road work in buffer zone
- Stormwater Pollution Prevention Plan (SWPPP)

Possible Support Funding

- Parkland Acquisitions and Renovations for Communities (PARC) Grant
- Field Pond Foundation
- LL Bean's Charitable Giving Program
- Copeland Family Foundation
- Nicholas B. Ottaway Foundation
- Acres for America
- Nancy Foss Heath and Richard B. Heath Educational, Cultural, and Environmental Foundation
- Verrill Foundation

LAKE MANSFIELD

Boat Launch Parking: 3 Spaces



Pros:

- Allows boat launch from trailer
- Maintains existing woodland
- Provides stormwater treatment areas
- Does not require backing into road

Cons:

- Does not meet Mass. Div. of Fisheries & Wildlife request for parking
- Eliminates trailer parking
- Provides minimal usable land between parking & lake edge

LAKE MANSFIELD boat launch | option c

Impact on Water Quality, Lake Health, and Habitat

- Improvement to parking will allow treatment of stormwater/reduction in siltation of lake
- No effect on forest habitat for parking

Impact on Safety for all users

- Prevents conflict with vehicles on road

Impact on Access to and through the area

- Adds parking access
- Reduces general use space

Construction Cost

- \$ 190,750

Permitting Requirements

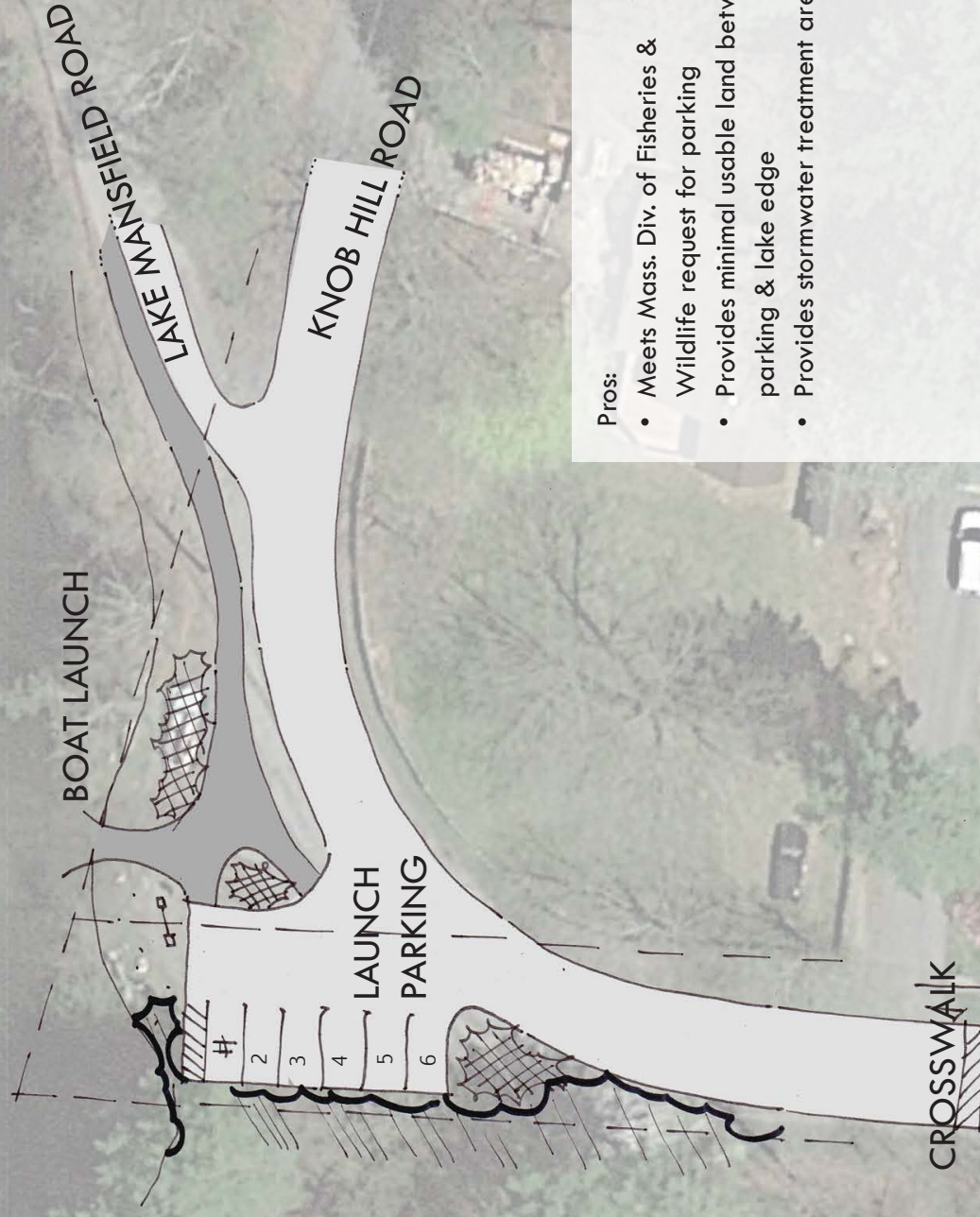
- Notice of Intent to GB Conservation Commission for road work in buffer zone
- Stormwater Pollution Prevention Plan (SWPPP)

Possible Support Funding

- Parkland Acquisitions and Renovations for Communities (PARC) Grant
- Field Pond Foundation
- LL Bean's Charitable Giving Program
- Copeland Family Foundation
- Nicholas B. Ottaway Foundation
- Acres for America
- Nancy Foss Heath and Richard B. Heath Educational, Cultural, and Environmental Foundation
- Verrill Foundation

LAKE MANSFIELD

Boat Launch Parking: 6 Spaces



Pros:

- Meets Mass. Div. of Fisheries & Wildlife request for parking
- Provides minimal usable land between parking & lake edge
- Provides stormwater treatment areas

Cons:

- Minimizes boat launch
- Requires some vehicles to back onto road
- Eliminates trailer launch & parking
- Reduces existing woodland edge

LAKE MANSFIELD boat launch | option d

Impact on Water Quality, Lake Health, and Habitat

- Improvement to parking will allow treatment of stormwater/reduction in siltation of lake
- Minimally reduces forest habitat for parking

Impact on Safety for all users

- Clarifies pedestrian and vehicular space
- Creates conflict for vehicles backing out into road

Impact on Access to and through the area

- Adds parking access
- Maintains general use space

Construction Cost

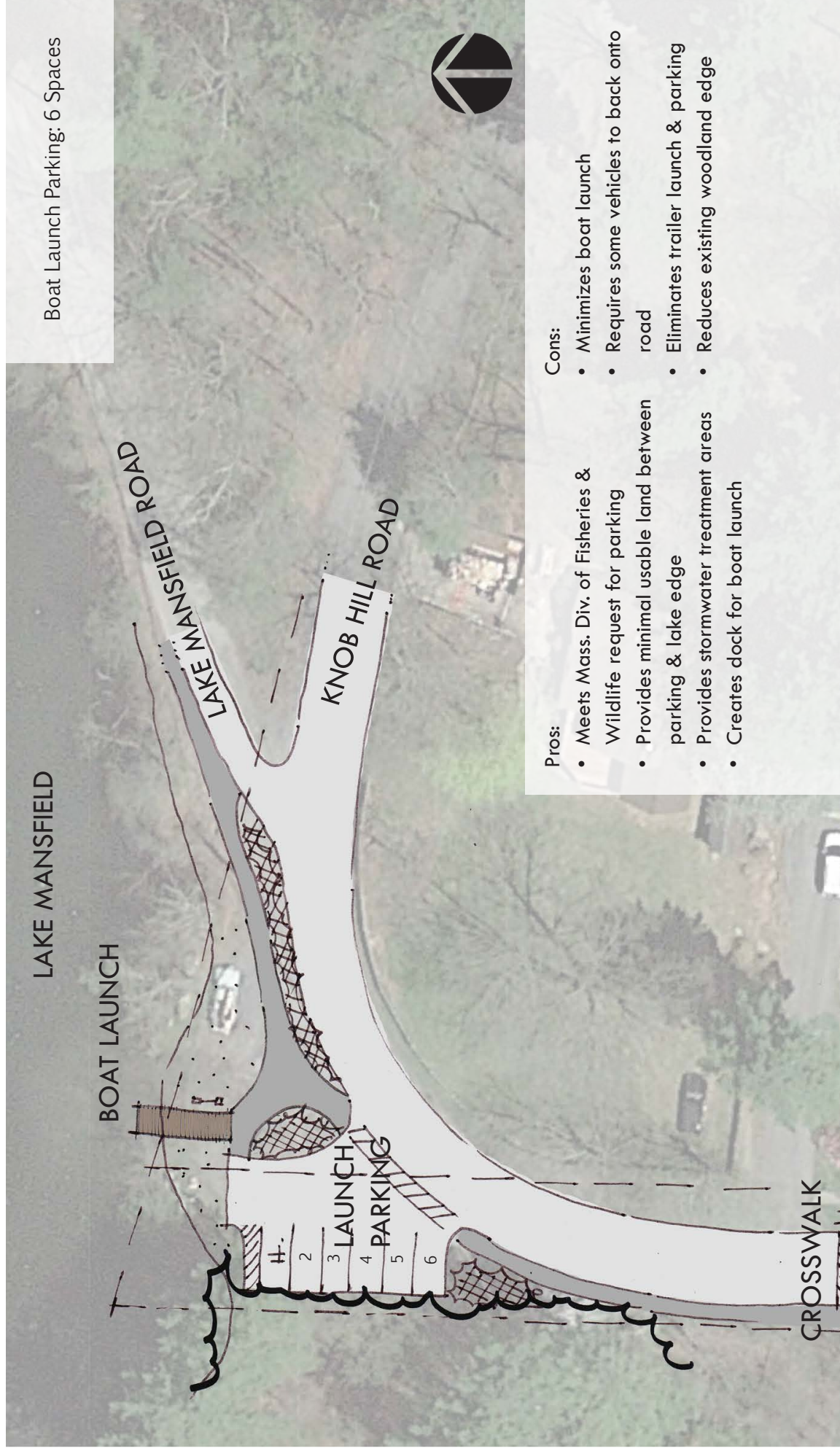
- \$ 173,500

Permitting Requirements

- Notice of Intent to GB Conservation Commission for road work in buffer zone + MESA
- Stormwater Pollution Prevention Plan (SWPPP)

Possible Support Funding

- Parkland Acquisitions and Renovations for Communities (PARC) Grant
- Field Pond Foundation
- LL Bean's Charitable Giving Program
- Copeland Family Foundation
- Nicholas B. Ottaway Foundation
- Acres for America
- Nancy Foss Heath and Richard B. Heath Educational, Cultural, and Environmental Foundation
- Verrill Foundation



LAKE MANSFIELD

BOAT LAUNCH

LAKE MANSFIELD ROAD

KNOB HILL ROAD

LAUNCH
PARKING

CROSSWALK

Pros:

- Meets Mass. Div. of Fisheries & Wildlife request for parking
- Provides minimal usable land between parking & lake edge
- Provides stormwater treatment areas
- Creates dock for boat launch

Cons:

- Minimizes boat launch
- Requires some vehicles to back onto road
- Eliminates trailer launch & parking
- Reduces existing woodland edge

LAKE MANSFIELD boat launch | option e

Impact on Water Quality, Lake Health, and Habitat

- Improvement to parking will allow treatment of stormwater/reduction in siltation of lake
- Minimally reduces forest habitat for parking

Impact on Safety for all users

- Clarifies pedestrian and vehicular space
- Minimizes conflict of vehicles backing out into road

Impact on Access to and through the area

- Adds parking access
- Maintains general use space

Construction Cost

- \$ 210,300

Permitting Requirements

- Notice of Intent to GB Conservation Commission for road work in buffer zone +MESA
- Stormwater Pollution Prevention Plan (SWPPP)
- Army Corps of Engineers (for dock)

Possible Support Funding

- Parkland Acquisitions and Renovations for Communities (PARC) Grant
- Field Pond Foundation
- LL Bean's Charitable Giving Program
- Copeland Family Foundation
- Nicholas B. Ottaway Foundation
- Acres for America
- Nancy Foss Heath and Richard B. Heath Educational, Cultural, and Environmental Foundation
- Verrill Foundation

OPTION:

IMPACT ON:

RESOURCES:

	Water Quality	Habitat (Woodland)	Safety	Pedestrian Access	Vehicular Access	Cost (Parking)	Permitting	Funding opportunities
Option a	improved	no impact	potential conflict	improved	reduced	\$243.5K	NOI, SWPPP, ACoE	*Applicable to all parking options: <ul style="list-style-type: none">Parkland Acquisitions and Renovations for Communities (PARC) Grant
Option b	improved	no impact	potential conflict	improved	reduced	\$215.5K	NOI, SWPPP	<ul style="list-style-type: none">Field Pond FoundationLL Bean's Charitable Giving Program
Option c	improved	no impact	minimizes conflict	improved	reduced	\$190.7K	NOI, SWPPP	<ul style="list-style-type: none">Copeland Family FoundationNicholas B. Ottaway Foundation
Option d	improved	reduced woodland	minimizes conflict	improved	reduced	\$173.5K	NOI + MESA SWPPP	<ul style="list-style-type: none">Acres for AmericaNancy Foss Heath and Richard B. Heath Educational, Cultural, and Environmental Foundation
Option e	improved	reduced woodland	minimizes conflict	improved	reduced	\$210.3K	NOI + MESA SWPPP, ACoE	<ul style="list-style-type: none">Verrill Foundation <p>*Applicable to options a, b, d, e :</p> <p>Mass. Division of Fisheries and Wildlife Office of Fishing and Boating Access</p>

Appendix F: Lake Mansfield Improvements Cost Estimates

Estimate Detail - Lake Mansfield Improvement - Lake Outlet Replacement & Road Improvements

Detail - With Taxes and Insurance ,Indirect Costs are Spread

Group 1: Divisions

Estimator : Barry Dikeman
Project Size : 0 SQFT

Description	Quantity	UM	Lab.Total	Mat.Total	Sub.Total	Eqp.Total	Eqp.Rent.Tot	Tmp.Mat.	ToOtherTotal	Tot.UnitCost	TotalCost
General Conditions											
Mobilize/Demobilize	1.00	LS			3,500.00					4,293.957	4,293.96
Project Manager	0.75	WEEK	2,835.00							4,637.474	3,478.11
Superintendent	3.00	WEEK	10,530.00							4,306.226	12,918.68
Traffic Control Allowance	1.00	ALLO	3,415.66				1,084.34			5,520.802	5,520.80
Permit	1.00	LS						250.00		306.711	306.71
Purchase drawings	1.00	LS						250.00		306.711	306.71
Progress photographs	1.00	MO			134.00					164.397	164.40
CPM schedule	1.00	LS			350.00					429.396	429.40
Construction Survey	1.00	LS			4,500.00					5,520.802	5,520.80
Storage trailer(s)	1.00	MO		125.00						153.356	153.36
Temporary toilets	1.00	MO		340.00						417.127	417.13
Water, ice and cups	1.00	MO		142.50						174.825	174.83
First aid supplies	1.00	MO		50.00						61.342	61.34
Safety supplies	1.00	MO		152.25						186.787	186.79
Small tools	1.00	MO				167.75				205.803	205.80
Gasoline and lubricating oil	150.00	GALS		525.00						4.294	644.09
Automobile	0.25	MO				150.00				736.107	184.03
Pick-up truck	1.00	MO				882.00				1,082.077	1,082.08
Temporary job fence	50.00	LNFT	86.40	314.00						9.825	491.23
Protect trees	10.00	EACH	330.75	161.00						60.330	603.30
Job sign	1.00	EACH	371.25	500.00						1,068.889	1,068.89
Layout supplies	3.00	WEEK		243.00						99.374	298.12
Rubbish removal	10.00	CUYD			163.75					20.090	200.90
* Total General Conditions			17,569.06	2,552.75	8,647.75	1,199.75	1,084.34	500.00			38,711.44

Estimate Detail - Lake Mansfield Improvement - Lake Outlet Replacement & Road Improvements

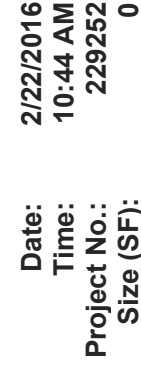
Detail - With Taxes and Insurance ,Indirect Costs are Spread

Group 1: Divisions

Estimator : Barry Dikeman
Project Size : 0 SQFT

Description	Quantity	UM	Lab.Total	Mat.Total	Sub.Total	Eqp.Total	Eqp.Rent.Tot	Tmp.Mat.ToOtherTotal	Tot.UnitCost	TotalCost
Sitework										
Silt fence w/wire mesh, filter fabric and stak	400.00	LNFT	820.24	460.00					3.927	1,570.65
Coir Logs 4 rows (2 on each side)	2,500.00	LNFT	3,844.69	5,375.00					4.524	11,311.13
Cleaning and grubbing	0.20	ACRE	1,064.63	58.31		124.57			7,558.788	1,530.50
Rough grading	0.20	ACRE	372.68	166.61		355.90			5,424.057	1,098.26
* Pipe Trench Length *	45.00	LNFT								
Bank cut	816.67	CUYD	2,104.40	940.80	4,083.33	3,050.09			15.291	12,487.59
Machine excavate rock (35CUYD allowanc	35.00	CUYD	4,276.19	597.33		2,333.33			252.620	8,841.70
Compact subgrade	8,820.00	SQFT	2,272.25	1,016.06		2,170.60			0.759	6,697.25
Fill w/ crushed stone (anti-tracking pad)	46.30	CUYD	397.65	1,798.15		700.74			76.758	3,553.61
Excavation		****								
Backhoe, 2 cy bucket		****								
Sand-gravel	53.99	CUYD	86.96	38.88		118.14			5.543	299.32
Backfill		****								
Gravel, tamped	20.04	CUYD	115.56	399.74					31.551	632.19
Gravel bedding	10.31	CUYD	79.31						9.434	97.30
Surplus earth		****								
Haul, off-site	53.99	CUYD				292.47			6.645	358.82
Precast box culvert 4'x2'	45.00	LNFT	2,697.76	3,567.00		1,135.20			201.747	9,078.60
Asphalt Pavement	175.00	TONS	3,256.61	9,625.00		3,080.00			111.900	19,582.42
Compacted local gravel (base crs)	610.00	TONS	7,567.69	7,914.51		7,157.31			45.533	27,775.17
Crushed Surfacing Top Course	120.00	TONS	1,786.49	2,040.00		1,689.60			56.395	6,767.38
* Asphalt pavement area *	770.00	SQYD								
Pavement Marking	1,850.00	LNFT	1,967.35	202.95		1,860.55			2.673	4,945.22
Geosynthetic reinforcing (anti-tracking pad)		****								
Woven polypropylene geotextile	111.11	SQYD	337.04	212.04		24.72			6.336	703.97
Seeding w/fertilizer and mulch	28,500.00	SQFT	305.66	5,551.80		538.65			0.275	7,847.04
* Total Sitework			33,353.15	39,964.19	4,083.33	24,631.87	1,084.34	500.00		125,178.11
Total Estimate			50,922.22	42,516.94	12,731.08	25,831.62				163,889.55

Date: 2/22/2016
Time: 10:44 AM
Project No.: 229252
Size (SF): 0



Direct Construction Cost							
Labor	Material	Equipment	Subcontract	Temp Matl	Equip Rental	Other	Totals
\$110,883	\$203,660	\$154,198	\$149,949	\$500	\$2,500	\$0	\$621,691
Base labor							\$38,809
Labor burden							\$52,448
Labor fringes							\$2,701
Labor manhours							\$0
Material sales tax							\$0
Equipment shipping							\$0
Temporary material markup							\$0
Equipment rental markup							\$0
Other markup							\$0
Gross Construction Cost	\$202,141	\$203,660	\$154,198	\$500	\$2,500	\$0	\$712,948
General liability insurance		\$7,435					\$7,435
Builder's risk insurance		\$1,312					\$1,312
Overall							
Contractor Overhead	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	
	\$0	\$20,214	\$21,241	\$15,420	\$50	\$250	\$72,170
Contractor Profit	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	
	\$0	\$15,161	\$15,931	\$11,565	\$38	\$188	\$54,127
P&P Bond	\$17,773						\$17,773
Warranty	1.00%						\$7,129
Site Safety	0.25%						\$1,782
Total Construction Cost	\$246,427	\$267,352	\$181,183	\$176,191	\$588	\$2,938	\$874,677
Engineering & Permitting	25%						\$218,669
Sub-Total							\$1,093,346
Project Contingency	15%						\$131,202
Project Total							\$1,224,548

Estimate Detail - Lake Mansfield Improvement - OPTION 3

Detail - With Taxes and Insurance ,Indirect Costs are Spread

Group 1: Divisions

Estimator : Barry Dikeman
Project Size : 0 SQFT

Description	Quantity	UM	Lab.Total	Mat.Total	Sub.Total	Eqp.Total	Eqp.Rent.Tot	Tmp.Mat.ToOtherTotal	Tot.UnitCost	TotalCost
General Conditions										
Mobilize/Demobilize	1.00	LS			3,500.00				4,293.957	4,293.96
Project Manager	1.50	WEEK	5,670.00						4,637.474	6,956.21
Superintendent	7.50	WEEK	26,325.00						4,306.226	32,296.69
Traffic Control Allowance	1.00	ALLO	7,425.00				2,500.00		12,176.436	12,176.44
Permit	1.00	LS						250.00	306.711	306.71
Purchase drawings	1.00	LS						250.00	306.711	306.71
Progress photographs	1.75	MO			234.50				164.397	287.70
CPM schedule	1.00	LS			350.00				429.396	429.40
Construction Survey	1.00	LS			7,500.00				9,201.337	9,201.34
Storage trailer(s)	1.75	MO		218.75					153.356	268.37
Temporary toilets	1.75	MO		595.00					417.127	729.97
Water, ice and cups	1.75	MO		249.38					174.825	305.94
First aid supplies	1.75	MO		87.50					61.342	107.35
Safety supplies	1.75	MO		266.44					186.787	326.88
Small tools	1.75	MO				293.56			205.803	360.16
Gasoline and lubricating oil	300.00	GALS		1,050.00					4.294	1,288.19
Automobile	0.50	MO				300.00			736.107	368.05
Pick-up truck	1.75	MO				1,543.50			1,082.077	1,893.64
Temporary job fence	250.00	LNFT	432.00	1,570.00					9.825	2,456.14
Protect trees	20.00	EACH	661.50	322.00					60.330	1,206.60
Job sign	1.00	EACH	371.25	500.00					1,068.889	1,068.89
Layout supplies	10.00	WEEK		810.00					99.374	993.74
Rubbish removal	25.00	CUYD			409.38				20.090	502.24
* Total General Conditions			40,884.75	5,669.06	11,993.88	2,137.06	2,500.00	500.00		78,131.31

Estimate Detail - Lake Mansfield Improvement - OPTION 3

Detail - With Taxes and Insurance ,Indirect Costs are Spread

Estimator : Barry Dikeman
Project Size : 0 SQFT

Group 1: Divisions

Description	Quantity	UM	Lab.Total	Mat.Total	Sub.Total	Eqp.Total	Eqp.Rent.Tot	Tmp.Mat.ToOtherTotal	Tot.UnitCost	TotalCost
Sitework										
Silt fence w/wire mesh, filter fabric and stak	2,750.00	LNFT	5,079.03	3,162.50					3.677	10,111.08
Coir Logs (2 rows)	2,850.00	LNFT	3,947.65	6,127.50					4.337	12,360.65
Clearing and grubbing	0.67	ACRE	3,122.39	192.82		411.88			6,829.679	4,572.56
Clearing and grubbing	0.20	ACRE	811.07	50.09		106.99			5,938.851	1,187.77
Clear brush and undergrowth (light)	0.22	ACRE	524.61	32.40		69.20			3,414.839	768.26
Rough grading	0.76	ACRE	1,099.73	623.38		1,331.60			4,946.905	3,747.66
Rough grading	0.47	ACRE	675.97	383.17		818.49			2,303.56	
Rough grading (path along lake)	0.22	ACRE	326.59	185.12		395.45			4,946.905	1,112.94
Final grading	0.41	ACRE	699.83	396.69		847.38			5,771.389	2,384.87
Bank cut	333.33	CUYD	1,302.79	738.47		2,394.10			16.325	5,441.49
Bank cut	4,933.70	CUYD	10,026.72	5,683.63	24,668.52	18,426.40			14.623	72,144.93
Bank cut (path along lake)	907.41	CUYD	2,305.16	1,306.67	4,537.04	4,236.23			16.745	15,194.59
Excavate for Previous Subsurface Waterwa	9.26	CUYD	36.19	20.51		66.50			16.325	151.15
Machine excavate rock (100 CUYD allowan	100.00	CUYD	10,623.43	1,706.67		6,666.67			233.061	23,306.10
Compact subgrade	53,284.00	SQFT	10,827.04	6,138.32		13,113.19			0.693	36,901.72
Compact subgrade (path along lake)	9,800.00	SQFT	1,991.31	1,128.96		2,411.78			0.693	6,786.97
Scarify and compact 4"	18,000.00	SQFT	508.77	288.00		615.60			0.096	1,732.76
Fill w/washed gravel for Pervious Subsurfa	37.50	CUYD	254.04	937.50		567.60			57.552	2,158.19
Fill w/ crushed stone (anti-tracking pad)	46.30	CUYD	313.63	1,798.15		700.74			74.531	3,450.52
Topsoil/loam restoration along walkway alig	400.00	CUYD	6,218.25	8,384.00		1,080.28			48.100	19,240.03
Class 3 rip-rap 18" for Pervious Subsurface	64.58	TONS	4,015.94	2,260.42		529.76			129.291	8,350.04
Asphalt for Pathway	143.08	TONS	3,756.77	6,867.84		4,029.13			125.649	17,977.87
Asphalt for Pathway	100.00	TONS	2,625.65	4,800.00		2,816.00			125.649	12,564.91
Asphalt Pavement	151.26	TONS	2,545.81	8,319.08		2,730.37			110.272	16,679.27
Asphalt Pavement	391.28	TONS	6,421.04	21,520.40		6,886.53			109.202	42,728.51
Asphalt Pavement	365.00	TONS	5,989.77	20,075.00		6,424.00			109.202	39,858.69
Compacted local gravel	666.67	TONS	8,752.14	8,633.32		9,386.66			49.268	32,845.24
Compacted local gravel (base crs)	1,650.00	TONS	18,051.50	21,408.09		19,359.95			43.735	72,162.45
Compacted local gravel (base crs)	1,400.00	TONS	15,316.43	18,164.44		16,426.62			43.735	61,228.75
Gravel Base for Pathway	630.63	TONS	10,348.85	12,273.26		7,882.88			59.345	37,424.89
Gravel Base for Pathway	250.00	TONS	4,102.59	3,125.00		4,400.00			57.061	14,265.24
Crushed Surfacing for Pathway	210.84	TONS	3,954.23	3,162.60		4,240.90			66.089	13,934.18
Crushed Surfacing Top Course	120.00	TONS	1,790.22	2,040.00		1,920.00			58.789	7,054.63
Crushed Surfacing Top Course	290.00	TONS	4,050.22	4,930.00		4,343.82			56.367	16,346.53
Crushed Surfacing Top Course	275.00	TONS	3,610.26	4,675.00		3,872.00			54.237	14,915.07
* Asphalt pavement area *	5,369.67	SQYD								
Pavement Marking	1,850.00	LNFT	1,734.72	202.95		1,860.55			2.519	4,659.81
Geosynthetic reinforcing (anti-tracking pad)		****								
Woven polypropylene geotextile	111.11	SQYD	288.72	212.04		24.72			5.802	644.69
Geogrid Tensar Triax	2,680.00	SQYD	957.58	8,061.44		82.01			4.166	11,165.55
Boardwalk - 435 LNFT @ 5' W (ALLOWAN	2,175.00	SQFT			108,750.00				61.342	133,419.38
Seeding w/fertilizer and mulch	30,000.00	SQFT	257.10	5,844.00		567.00			0.273	8,180.72
* Total Sitework			159,263.73	195,859.41	137,955.56	152,042.97				791,464.24

Estimate Detail - Lake Mansfield Improvement - OPTION 3

Detail - With Taxes and Insurance ,Indirect Costs are Spread

Group 1: Divisions

Estimator : Barry Dikeman
Project Size : 0 SQFT

Description	Quantity	UM	Lab.Total	Mat.Total	Sub.Total	Eqp.Total	Eqp.Rent.Tot	Tmp.Mat.ToOtherTotal	Tot.UnitCost	TotalCost
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Metals

REMOVABLE BOLLARDS @ EACH END 6.00 EACH

* Total Metals

Total Estimate

1,992.04	2,132.00					18.00			846.939	5,081.64
1,992.04	2,132.00					18.00				5,081.64
202,140.51	203,660.48	149,949.43	154,198.04	2,500.00	500.00					874,677.19



Recreation Area Parking

<u>Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Subtotal</u>
<u>Demolition/Site Preparation</u>				
Remove & discard existing gravel (parking)	6500	sf	\$1.00	\$6,500.00
Clear & grub existing forest land	1.1	ac	\$7,000.00	\$7,700.00
Remove & discard split rail fence	1	ls	\$800.00	\$800.00
Remove & discard aluminum sign (3)	1	ls	\$500.00	\$500.00
<u>Earthwork</u>				
Regrading for parking	30640	sf	\$3.00	\$91,920.00
Excavate for bioswale/retention	135	cy	\$40.00	\$5,400.00
<u>Site Improvements</u>				
Bituminous concrete paving (parking)	17585	sf	\$3.00	\$52,755.00
Stabilized turf - overflow parking	6880	sf	\$4.00	\$27,520.00
Stabilized stone dust walkways	435	sf	\$5.00	\$2,175.00
Bike/pedestrian path	10305	sf	\$5.00	\$51,525.00
Paint crosswalks, handicap spaces, striping	1	ls	\$2,000.00	\$2,000.00
Site amenities (bike racks, benches, tables, etc.)	1	ls	\$10,000.00	\$10,000.00
Add aluminum beach rules sign	2	ea	\$200.00	\$400.00
Add handicap parking sign	3	ea	\$150.00	\$450.00
Relocated changing area & toilet facilities	1	ls	\$3,500.00	\$3,500.00
<u>Planting</u>				
Topsoil	505	cy	\$50.00	\$25,250.00
Bioswale soil mix	200	cy	\$55.00	\$11,000.00
Trees	35	ea	\$1,200.00	\$42,000.00
Bioswale plugs	3600	sf	\$4.00	\$14,400.00
Seeding	30800	sf	\$0.20	\$6,160.00
Work Priority I Subtotal				\$361,955.00
<i>Design contingency (15%)</i>				<i>\$54,293.25</i>
<i>General conditions (10%)</i>				<i>\$41,624.83</i>
<i>Overhead and Profit (17.5%)</i>				<i>\$80,127.79</i>
<i>Escalation (2%)</i>				<i>\$10,760.02</i>
TOTAL				\$548,760.88



Boat Launch

<u>Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Subtotal</u>
<u>Demolition/Site Preparation</u>				
Remove & discard existing gravel	2200	sf	\$1.00	\$2,200.00
Clear & grub existing forest land	1500	sf	\$0.50	\$750.00
Remove & discard aluminum sign (3)	1	ls	\$500.00	\$500.00
<u>Earthwork</u>				
Regrading for parking	2200	sf	\$3.00	\$6,600.00
Grading for walkway	1525	sf	\$3.00	\$4,575.00
Excavate for bioswale/retention	42	cy	\$40.00	\$1,680.00
<u>Site Improvements</u>				
Bituminous concrete paving	2200	sf	\$3.00	\$6,600.00
Stabilized stone dust walkways	1525	sf	\$5.00	\$7,625.00
Paint crosswalks, handicap spaces, striping	1	ls	\$1,000.00	\$1,000.00
Add aluminum beach rules sign	1	ea	\$200.00	\$200.00
Add handicap parking sign	1	ea	\$150.00	\$150.00
<u>Planting</u>				
Bioswale soil mix	45	cy	\$55.00	\$2,475.00
Bioswale plugs	760	sf	\$4.00	\$3,040.00
Topsoil	15	cy	\$50.00	\$750.00
Work Priority I Subtotal				\$38,145.00
<i>Design contingency (15%)</i>				<i>\$5,721.75</i>
<i>General conditions (10%)</i>				<i>\$4,386.68</i>
<i>Overhead and Profit (17.5%)</i>				<i>\$8,444.35</i>
<i>Escalation (2%)</i>				<i>\$1,133.96</i>
TOTAL				\$57,831.73

