

## **Section 7 - Analysis of Needs**

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Based on a synthesis of all the information presented earlier in this report, on the present scope of planned projects, and recent developments, certain deficiencies in the town's inventory of open space and recreation lands became apparent. In this section, specific needs for land acquisition, facility development and resource protection programs are identified. While many of the following priorities are segments of the Bay Circuit Trail, some are intended to provide linkage to the south and southwest natural resource sectors and are intricate to the system of open space corridors unique to Kingston. The different areas have been assigned names for ease of identification.

### **Duke's Hole Corridor / Plymouth Path**

Duke's Hole Corridor / Plymouth Path as outlined in the 1995 Open Space Plan was intended to establish a protected corridor linking the Jones River in Sampson Park to Smelt Pond in Camp Nekon. This opportunity was lost to the aggressive development of Indian Pond estates, golf course and Country Club. In 2006-08, a 40B development was proposed on the remaining land within Indian Pond Estates, and an easement was granted to access the Kingston Intermediate School (KIS). An additional easement is being explored through the Nature's Edge development on the east of Elm Street to provide a pedestrian corridor.

Duke's Hole was the final resting place for an infamous ox and has been documented as a highly productive vernal pool. Acquisitions in the area northwest of the town-owned Camp Nekon, southeast of Sampson Forest, could have created a protected corridor between Smelt Pond and the Jones River. This was considered by some to be the most important proposal for open space acquisition. Duke's Hole, which is shown on the map of 1876, is now surrounded by a golf course on one side and private homes on the other. Alterations have occurred within 25 feet and the pool received heavily sediment-laden water during construction of the golf course in 1999. The use of private groundwater wells to irrigate the greens has and continues to be a threat because of the tremendous consumption of groundwater. Lack of monitoring by the state and local officials could cause permanent loss of the vernal pool by dewatering. Outstanding Conservation Commission enforcement orders require the 100 foot bufferzone to be re-established. This is important to minimize the impact to water quality from the fertilizers used in the immediate area for the expansive lawns and golf course. Because the development is so large, it literally cuts off the open space areas of Camp Nekon from the large areas of Sampson Park and the Jones River trail. The potential still exists for linking Brook Street open space, in the area around Second Brook, which would connect the (Second Brook) Hathaway and State Forest parcels to the KIS. Should development in this area be proposed the town should work toward preserving this important linkage.

In April 2007, the Town Meeting rezoned from industrial, the land adjacent to the Railroad station and layover yard to a 40R district for multi-use "smart growth" (1021 KINGSTON PLACE). This project of over 700 new residences and business will be clustered to take advantage of the transportation nexus. This will also create new demands on the open space near Camp Nekon. The developer is proposing to provide upgrades to the trail system. A management plan that includes protections of natural

resources must be included. Also in this immediate area is the former Offal pits and a potential expansion of open space on the Davis property as a result of the adjacent 1021 Kingston Place development.

Recommendations and opportunities for enhancement include:

- Protection of Raboth Road as a scenic way that includes safe bicycle and pedestrian passage and controlled (if any) vehicle use;
- Development of recreational fields at the former offal pits;
- Acquisition of the in-holdings near Camp Nekon;
- Development of a Management Plan for Camp Nekon that includes protection and management (nuisance aquatic weeds) of Smelt Pond, a conservation restriction to protect the endangered species and vernal pools of the surrounding lands, and controlled recreational use including improvements of the beach and swimming capability at Smelt Pond;
- Acquisition of a CR and pedestrian easement on the former Beckwith/MIT property west of Trout/Furnace Brook off Indian Pond Road, as a potential linkage to the adjacent bogs and the Wildlands Trust on Sylvia Place Pond - then to Sampson Park and south to Indian Pond.
- Secure interest in Virginia E. Davis property during planning of 1021 Kingston Place and development of wastewater expansion/leeching field
- Secure interest and protection in the Second Brook area to compete linkages with school, State forest and Hathaway Preserve.

### Indian Pond Trail

Indian Pond is critical for its native rare species habitat and the opportunity to secure public access to its shores is very limited. At the very least, the pond shore should be protected by a Conservation Restriction, and a public access easement should be included in the development plans for this area. Ideally, a trail can be developed from the Wildlands Trust land on Sylvia Place through the rear land of the cranberry growers off Elm Street and Indian Pond Road, the former Beckwith/MIT parcel, to Bishop's Highway, and across Bishop's Highway (Route 80) to Indian Pond. This route would effectively create a corridor between Sampson Park/ and the Jones River Trail and Indian Pond.

Kingston, and all towns, need to work toward maintaining their natural systems. Water flowing from Indian Pond, provides irrigation water for cranberry bogs and natural habitats as it flows north to Sylvia Pond. Insuring that a natural corridor is maintained through the ages along this waterway is important work for the present generation as the town's natural resource base is transformed to housing and a suburban landscape. We must preserve the native, the wild, and clean running water. Protecting a corridor along this stream will provide a linkage between this coastal plain pond, stream impoundments that serve as spawning grounds for Jones River fish, and enable people and animals to move freely on foot through a nature trail.

### *Bay Circuit Trail: Jones River Corridor links Cape Cod Bay to Glacial Headwaters*

The importance of the Jones River to the town of Kingston cannot be overstated when speaking about the distant past, present, or for future generations. Its waters weave their way through the town as the river has woven its way through the town's history. The watershed contributing to the river has always supported agriculture and industry, including sawmills, iron forges, shipbuilding, and along its banks. It has been an essential water supply for centuries. Historically, people have always followed the path of the river and public access to it has always been fiercely protected.

The Town of Kingston has dedicated several parcels along the Jones River Corridor as part of the 200 mile Bay Circuit Trail. (See Bay Circuit Trail Map in Appendix C) Anchored at Bay Farm on the Kingston/Duxbury town line, the Kingston leg of the trail continues up the Jones River to the town of Pembroke. Mulliken's Landing, Sampson Park, the Hathaway Preserve, Three Rivers Basin Conservancy, Cranberry Watershed Preserve, and Silver Lake Sanctuary are now official features of this Eastern Massachusetts trail system, adding almost 500 acres to the Trail. This significant contribution by the town of Kingston will forever be recognized as the value of these protected public parcels will mature over time. The work of the next five years will add to this value by identifying and securing key linkages and prime habitats along the Jones River.

The proposed Marshall Joyce Wildlife Sanctuary on River Street is an example of a key acquisition for the preservation of an existing wildlife corridor between Jones River marshes and Bay Farm. This 1.23 acre parcel that is vegetated with junipers and salt marsh had been approved for residential development by the Kingston Conservation Commission. A Town meeting in April 2008 approved acquisition for conservation purposes using CPA funds. [see map in [Appendix J](#)]

### *Agricultural Land*

There are over 1100 acres of cranberry bogs in Kingston. Bog land is up for development everywhere in Southeastern Massachusetts. The Makepeace properties in Wareham, Carver and Plymouth are the most renowned examples, but not the only one. Kingston land is for sale as well. Because cranberry bogs are most often located on important water resources, they are often the site of important natural species habitats. Because they also generally have registered water rights, public acquisition of these lands can address an important resource protection issue for local communities such as Kingston.

Since 2001 Kingston has acquired the Carter Cranberry Bogs off Grove Street, now Three Rivers Basin, linking Cranberry Watershed Preserve and Hathaway Preserve, as well as the bogs on Wapping Road. The Arbor Hill development provided approximately 18 acres of conservation land as well as a public walking easement through their neighborhood.

This plan recommends that the town inventory its cranberry bog acreage, assess the natural resources connected with those acres, and document the water registrations and permits, so that it has the basis to decide which bogs to acquire for investment in conservation and the future, and which to allow for development. At this time JRWA is working with the Conservation Commission to develop a plan to restore Pine Brook on cranberry Watershed Preserve. The dams, culverts and sluices may be removed, and shade trees will be encouraged along the river banks in an effort to reconnect Pine Brook to Jones River and re-establish native Brook trout.

Other farm lands include the 21 acre MacFarlane farm property between Wapping Road and Rte 27, and the 33+ acre parcel off Hawthorn Rd. Town Meeting approved the use of CPA funds in 2007, however, a negotiated purchase was not successful. In 2008, the Town of Duxbury succeeded in its CPA purchase of the Berry Brook school with farm fields.

The need to protect more agricultural land is real: to preserve capacity to grow food locally through acquisition, acceptance of gifts and purchase of development rights. Kingston has taken steps to preserve agriculture through the formation of the Agricultural Commission at the 2007 Annual town Meeting and the passage of the “Right to Farm” By-Law at the 2008 Annual Town Meeting. Kingston can do more to encourage local grown produce by establishing sites for Community Gardens. Pawtuxet Park is the most likely candidate for productive community gardens. A former dairy farm prior to acquisition in 1975, the property is growing up in shrubs, trees and poison ivy. Smelt Brook runs through and the park borders on Foundry Pond. Its ready water supply, south facing slopes, and likely fertile soil is ideally suited to farming.

In 2008, Aquaculture is being actively discussed for its potential in Kingston Bay. Several local fishermen see an opportunity to grow oysters through lease of mudflats under town regulation. Modeled on the success in neighboring Duxbury, which is harvesting millions of oysters each year, and which oysters have been voted the number one best tasting oyster of its type in the nation, fishermen are urging the Selectmen to consider leasing two to three acre shell fishing grants in the Bay. This arrangement might have a positive impact on water quality, but must be assessed against its impact on recreational shell fishing.

#### *Land Acquisitions, Pedestrian Easements and Conservation Restrictions*

It is unlikely that the town can acquire all the land along the Jones River Corridor, it can however pursue CRs and easements that would permit the corridor to remain as a continuum for wildlife and pedestrian hikers. The following areas are being investigated or cultivated for covenants of this type:

- Silver Lake Commons: secure trails along Silver Lake, Forge Pond and the Jones River—pedestrian access trail and conservation restrictions protecting the resource corridor and native archeological sites;

- Lee Farm Trust: acquire an interest some or all of the estate of Robert O. Lee, which includes the Blueberry farm on Grove Street, the historic millers house, and uplands which abut the water department land off Lake Street and the Jones River;
- McLaughlin land off Lake St.: secure Conservation Restriction on this town-owned parcel to protect river corridor;
- Off Barnabas Mill Lane: secure abutting access and bridge over the river to the Hathaway Preserve from private parties;
- Acquire an easement and CR from St. Joseph's Church on Main Street on the riverbank;
- Improve access to Sampson Park from Route 106 and South Street by obtaining easement from Faunce Society; and completing the easement and bridge crossing on Trout Farm estates development;
- North side of the Jones River from the Water Department land on Elm Street, east to the Housing Authority at Hillcrest Av - land acquisition, CR's and access easements;
- Easements or in fee ownership of agricultural lands Winter Street, Pine Street, Indian Pond Road, Elm Street, Ring Road and Bishop's Highway.
- Link Parting Ways with Route 80 through gifts, acquisitions and easements.

### Stony Brook Park –the Greenbush Greenway

The Town Center would benefit from an organized approach to its historic and open space properties. A park concept and improvement plan should be developed with the owner of the former Greenbush rail right of way and abutting properties of the old mill pond off Maple Street. A wooden bridge over Stony Brook linking with the Solstice Restaurant, the former Railroad Station, would accomplish this, assuming a partnership with the owner. This greenway could be a fine addition to a looped walking course from behind the Reed building to the historic Jones River properties, including the boathouses and Maj. John Bradford House and C. Drew Mill site on Maple St.

### Opachinski Fields

Completed sidewalks and bike paths to the playing fields would provide safe access along Pottle Street. Also, providing bike racks at the field, solar lighting, and organic land management practices would further enhance the stewardship and enjoyment of this existing recreational opportunity.

### Management plans

The Conservation Lands Review Committee (CLRC) established as an ad hoc committee by the Board of Selectmen in 2006, should continue to draft and update plans on all town-owned properties with natural resources or recreational uses. The CLRC membership includes representatives from Conservation, Open Space, Recreation, Silver Lake High School, Finance Committee, and Board of Selectmen. Plans under review at this time include:

- Marshall Joyce Wildlife Sanctuary
- Cranberry Watershed Preserve
- Three Rivers Basin

- Silver Lake Sanctuary
- Sampson Park
- Mulliken’s Landing
- Camp Nekon
- Carter Conservation Area and Arbor Hills Trail

Designation of Scenic Roads

A. Reasons for Protection

A single street may have one or more stretches which qualify as scenic. The entire stretch of most roads however, cannot be considered as scenic because developments have permanently disrupted the natural beauty of the vistas. The Planning Board, with some aid from a subcommittee of concerned citizens, drafted a Scenic Road By-law which the Annual Town Meeting adopted in the spring of 1995.

- 1 To maintain as much of the current character of the town as possible, since a high percentage of Kingston residents have identified the value of viewing open spaces from the automobile as they drive through town. Therefore there is a need to identify and protect scenic roads with open spaces.
- 2 To maintain continuity between historical sites and their surroundings.
- 3 To maintain those areas that have unobstructed scenic views.

B. The following roads have been designated as Scenic Roads under M.G.L. Chapter 40, Section 15c and Section 7A3;

- Indian Pond Road
- Brook Street
- Landing Road
- River Street
- Winter Street
- Brookdale Avenue
- Winthrop Street
- Rocky Nook Avenue
- Sylvia Place Road
- Bay Farm Road
- Elm Street
- Grove Street.

C. Other Potential Designations

- East Avenue in the coastal section of town has an important stretch directly along the beachfront facing Kingston Bay, Duxbury Bay and Cape Cod Bay.
- Ring Road, which has beautiful destructive cranberry bogs-entirely
- West Street, in entirety
- Raboth Road

<b>DESIGNATED SCENIC ROADS - KINGSTON, MA</b>	
Landing Road	In Entirety
Elm Street	From intersection of Brook Street to intersection with Main Street
Indian Pond Road	In Entirety
Sylvia Place	In Entirety
Brookdale Street	From intersection of Winthrop Street to intersection with Winter Street
Winthrop Street	In Entirety
Rocky Nook Ave.	In Entirety
River Street	In Entirety
Lake Street	In Entirety
Grove Street	In Entirety
Bay Farm Road	In Entirety
Elm Street	Intersection of Brook Street to Plympton Town Line
Brookdale Street	Remainder from Winthrop St. to Pembroke Street.

## Facility Development

### Recreation Needs

#### Freshwater Recreation

Many of Kingston’s residents participate in freshwater recreation. Although Kingston is rich in freshwater ponds and streams, public fishing and boating access is limited. Public fresh water beaches exist in surrounding towns, with parking generally limited to residents only. Kingston town Landing and Gray’s Beach operate in similar manner.

#### Smelt Pond

Most of the ponds in Kingston are small and shallow, making their use for active recreation limited. Smelt Pond at Camp Nekon is, and was, previously the site for a Girl Scout swimming beach and has the highest potential as a site for an inland Town Beach. The pond was studied under a \$4,500 grant from the Department of Environmental Management and \$4,500 Kingston matching funds to look at the weed problem by sampling the water and estimating the nutrient loading to the pond. This study made recommendations to implement land use controls and watershed management techniques. It also recommended using herbicides in the water for treatment of aquatic vegetation. This recommendation was not followed

by the Conservation Commission and the problem of Eurasian milfoil still persists.

Never-the-less, Smelt Pond is a Great Pond which has been stocked by the state. It is a pond of some 50 acres with a depth of approximately 45 feet. It provides good fishing and has unsupervised recreational access from Camp Nekon. Unfortunately use of power boats and personal water craft is exacerbating the existing weed problem. The Open Space Committee recommends a management plan for this important resource area to include:

- Improvement and controlled pond access.
- Conservation Restrictions on sensitive habitat areas.
- By-laws should be adopted limiting the size of boats and type of motors (if not all out ban of gasoline engines).
- Improvements for swimming or fishing from a pier or dock should be explored and appropriate access (including parking) must be planned.

A. Indian Pond

Indian Pond also has problems with weeds and lack of access for recreational use of this Great Pond. At one time entry could be gained through the utilities property but it has recently been restricted by a gate and presently there is no public access. This plan recommends that the town acquire access through fee acquisition or an agreement with a developer or the utility company.

B. Silver Lake

Silver Lake is first and foremost a public drinking water supply. However it is also a premiere glacial, deep water lake that is among the largest natural water bodies in Massachusetts. It has a very high potential for the development of a public fishing and non-motorized boat access. Swimming and motorized recreation would not be compatible with water supply protection. Brockton has declined to issue permits for fishing but does not prohibit it. In fact fishing is allowed by Legislative Acts passed in 1970<sup>1</sup>. Since the purchase of Silver Lake Sanctuary, Brockton and Kingston have been discussing methods for allowing controlled access to the lake for fishing.

C. Fishing

Fishing is also practiced at Reed's Mill (Goakey's) Pond on Route 27 and the Pine Brook Reservoir on Pine Brook in Cranberry Watershed Preserve; in Forge Pond; at Sylvia Place Pond; at Elm Street dam and Sampson

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<sup>1</sup> M.G.L. Chap. 579, Acts of 1970 An Act Permitting Fishing in Silver Lake in the Towns of Pembroke, Halifax, Kingston and Plympton: "Subject to the supervision of the department of public health and the division of fisheries and game, it shall be lawful to take fish by hand line or rod and reel from the waters of Silver lake located in the towns of.....:provided, however, that a permit issued by the water department of the city of Brockton shall be required by any person fishing in said waters; and provided, further, that fishing shall not be permitted during the migratory fowl season as determined by the federal government." *Approved July 22, 1970*

Pond, from the pier constructed by the Open Space Committee with the Sampson Fund, and generally in various locations in the Jones River. Access, piers and trails need on-going maintenance. Goakey's Pond is private.

### Saltwater Recreation

Many of Kingston's residents participate in saltwater recreation. With a shoreline just under two miles on the bay, exclusive of the Jones River estuary, and only about 1200 feet in public domain, Kingston's saltwater recreation facilities are limited. A very small beach is maintained at Gray's Beach provides swimming opportunities and lessons, and the Town Landing provides fishing and boating access at the mouth of the Jones River. The Bay Farm field at the Duxbury line can be used for walking and kite flying and its shoreline can be used for fishing. Mulliken's Landing, in Jones River estuary also provides another small boat access to the Jones River and Kingston Bay, and the Marshall Joyce Wildlife Sanctuary provides access to the estuary for fishing. The Jones River Landing Environmental Heritage Center also offers access through its Landing (purchased 2003) and Holmes Boatyard (2008) sites, which are managed by this not-for-profit organization to enhance public stewardship of natural resources through programming. The barrier beaches in Duxbury and Plymouth are available for nonresident use on a fee basis. This plan recommends that the town expand its access to saltwater activities - swimming, boating, fishing and shell-fishing, by acquiring additional coastal land at and near Boundary Lane, near the Plymouth town line.

### Developed Recreation

Existing playgrounds, tennis courts, baseball fields, and basketball courts are heavily used by residents. The location of the Silver Lake Regional High School in Kingston provides recreational opportunities for residents. Since 2001, the building of the Middle School and reconstruction of the Silver Lake Regional High School included the addition of a practice football field, three soccer /lacross fields, two baseball fields and one softball field, and the track was reconstructed to a rubberized surface to accommodate the redevelopment. The net increase in fields was seven ballfields, on approximately fifteen acres. Five tennis courts were also upgraded and replaced. There is a maintenance and usage policy controlled by the Regional School Committee. Pottle Field was expanded to include the new Opachinski Field complex for soccer, baseball, softball, football and lacross. The Kingston Recreation Department governs use and is responsible for maintenance. The net increase was approximately 23 acres. Included in the complex is the Kingston Garden of Peace dedicated to children of Kingston who lost their lives. The recreation facilities at Gray's Beach, including the tennis and basketball courts were re-developed. Benelli Field (previously Edison Park (1994)) continues to be leased to Kingston's Youth Baseball League.

The Reed Building and fields does not accommodate the numbers participating in activities there. Some have suggested that a part of the playing fields be

converted to a parking area. This would represent an unacceptable loss of recreation opportunity for residents. The Reed is used by many groups for a wide range of activities from theater to ball room dancing, toddlers, scout meetings, seniors and luncheons. The general consensus of users seems to be that parking along the street and the use of the new library parking lot after hours are adequate. The Recreation Commission is intending to apply for CPA funds to make needed improvements. The location of the Reed playing fields in Kingston Center makes this a particularly important site to maintain as a recreation area. Relief to this parking problem may be a by-product of the new field complex at the end of Pottle Street.

### *Passive Outdoor Recreation*

Certain activities such as nature walks and camping require a relatively large protected area such as that provided by Camp Nekon in southern Kingston, and Sampson Park and Faunce Memorial Forest in Central Kingston in conjunction with the proposed Jones River Corridor/Trail. Smaller protected areas such as Pawtuxet Park on Smelt Brook and Evergreen Cemetery in Kingston Center provide open space within walking distance to densely populated parts of town.

Pawtuxet Park provides a passive recreation area easily accessible to the densely developed Main Street sections of Kingston. This plan recommends the site for use as a community garden and leased agricultural pasture land. While traditionally an urban concept, the community garden is becoming needed more in rapidly developing areas. The park provides ample space for garden lots and a communal compost pile.

Faunce Memorial Forest provides a large natural area adjacent to the Jones River easily accessible to residents of Central Kingston. Both the adjacent Sampson Park and larger Faunce Memorial Forest should be maintained for their present use. The Conservation Commission and Open Space Committee have been making certain improvements, including upgrading handicap accessibility, with funding from the Elizabeth B. Sampson Memorial Fund. Volunteer groups are needed to continue the periodic cleanups, which have often been done by the Boy Scouts. An Eagle Scout project has periodically cleared the Jones River channel between Elm Street and Wapping Road dam to improve boating access and fish habitat. The Open Space Committee was successful in obtaining access to the area from South Street through Trout Brook Estates, the bridge over Trout/Furnace Brook remains to be built.

The large protected area formed by Camp Nekon and the Kingston State Forest provides a passive recreation area for the growing population of southern Kingston. This area also has the potential for town-wide use as a freshwater swimming beach, hiking trails, camping area, and bicycle trails. Unfortunately, the new Route 44, has cut through this area. The proposed 40R development of 1021 Kingston Place will put additional demand on the area. The Conservation Commission succeeded in securing a pedestrian underpass from MHD to maintain

a sliver of continuity between this once uninterrupted open space wilderness as mitigation for the highway impact.

Also, due to land ownership issues in connection with the development of Route 44, there is the need to coordinate town long-range needs with those of the State, so an overall comprehensive land use and land acquisition plan can be developed. For instance, there is a privately owned parcel at Pratt's Pond between Camp Nekon and the State Forest which should be publicly acquired to enable the management of these areas as one unit.

Issues of road access to this land for public use must be studied in more detail. The Landers operation in Plymouth has at least nominally challenged the Town's right of access to Camp Nekon over Monk's Hill Road.

The Jones River Corridor/Trail is an important element of the plan. The river and its tributaries provide a natural link between many of the town's open spaces and between Kingston and neighboring towns. The heart of Kingston's Bay Circuit Implementation Plan is the protection of the Jones River, including the quality of the water, the dependent flora and fauna, the critical habitat provided by the marshes at its mouth, restoration of the anadromous fish run and opening of shellfish beds and the accessibility necessary for its maximum benefit to the community.

#### Accessibility for Handicap Users

There is certainly a need to address the subject of accessibility to both present and future open space areas in Kingston by persons with Disabilities. The 1995 Plan reported that there are a total of 70 residents with disabilities listed in the town (based on estimates given to Independence Associates of Brockton). Based on the 1990 Census however, self-reporting disabilities in Kingston, which at that time had a population of 9045, in the age group 16-64, 430 residents reported mobility problems; of the residents over 65, mobility was an issue for 297 residents while in both age groups a total of 152 had self-care issues. These mobility issues then involve between 8 and 10 percent of the self-reporting town population. (These are the most recent statistics from the Old Colony Planning Council which states that 2000 census statistics will not be available until January 2002.) Calls to the Kingston Emergency Management Agency and the Council on Aging were less instructive, with only 37 people requesting notification (2001) in time of emergency (KEMA).

According to the Massachusetts Commission for the Blind Director of Information and Support Services, the Mass Commission for the Blind Registry is the best source of information on persons legally blind. In 1999, in Kingston, 65 people were registered. According to the Director of Information, taking into consideration that more people are severely vision impaired, though not legally blind, we should consider that nearly 200 persons would require visual aids to

facilities in Kingston. This number does not account for the fact that out of town persons are welcome at most town parks and buildings.

Current state guidelines suggest that any plans for improving or developing recreational facilities, including trails, fishing accesses, and beaches, should address the needs of all who have a disability. Any walkways for parks, ball fields, playgrounds and natural areas should be paved or finished off with hard packed gravel. Nature trails should have rope handles along one side and Braille signs identifying bird and plant species if possible. Boardwalks should have ramps and be of adequate width to allow wheelchair turning. Accessible docks at fishing sites enhance the ability to cast for those unable to wade into the water. Improvements at beaches, such as Camp Nekon, should include a ramp extending into the water from the parking area. This way, individuals with disabilities can swim or sit in the water without risk of getting their wheelchairs stuck in the sand.

If any open space parcel has fifteen or more parking spaces, it should have at least one handicapped parking space. If the parcel is merely woods or fields, it may not be necessary for any special changes. If changes are planned, wider sidewalks (at least 48 inches wide) are encouraged in order for one wheelchair to pass another. This is true for entryways as well.

To make facilities truly accessible, common sense must be applied along with standards and guidelines. Handicapped parking spaces are often spaced too closely to allow lift lowering for arrival and departure or are not located adjacent to entrance ramps. Doors to "accessible" bathrooms are often too unwieldy to open. Simple changes, such as the addition of a lip along the edge of a dock or boardwalk, can make the difference between enjoyment and fear for one's safety.

In order to help the town comply with the provision of the Americans with Disabilities Act, a draft report has been submitted by MMA Consulting Group, Inc. of Boston in February 1994. This report provides analysis of public facilities as to how they are deficient, with recommendations and cost estimates for improvements. Included were recommendations for Gray's Beach Bath House and beach and playground areas to make them handicapped-accessible. Improvements were made in XXXX and completed allowing persons with disabilities access to XXXXXXXXXXXXXXXXXXXX provide update

### *Institutional Needs*

There is an ongoing concern that the maintenance of conservation lands is not adequate to protect and maintain the properties, restore threatened and damaged resources, or accommodate the increasing numbers of people using the lands that the town has acquired. An effort by the Open Space Committee to institute a maintenance fund has repeatedly been rebuffed by the Finance Committee and Board of Selectmen. This Open Space Plan calls for a restructuring of related

town departments and resources to evolve a conservation lands management component within town government—most reliably an evolving natural resources department that houses the conservation, open space and community stewardship functions.

#### Community Preservation Act and Committee

In 2005, Kingston adopted the Community Preservation Act (CPA) at 3% surcharge on property taxes with exemptions for seniors and low income residents. A CPA Committee of nine members was established at the fall 2005 Town Meeting, and in 2007 the first CPA projects were funded supporting major projects in Historic preservation, restoration of the Adams Heritage Center, an Archeological survey, inventory of artifacts, assessment of historic Bradford House, archiving of Town records, and purchase of open space. To date no funds have been expended for affordable housing, although this is a recognized need in Kingston.

## Resource Protection Needs

### Habitat Protection

The wetlands, ponds, and waterways of Kingston provide critical habitats and corridors for fish and wildlife.

Of the habitat areas identified as important by the Natural Heritage and Endangered Species Program, three have been protected by acquisition: the wetland south of Sampson Forest which is owned by the Plymouth County Wildlands Trust, and Rocky Pond which is on town-owned land, and Silver Lake Sanctuary. Some degree of protection for the Jones River marshes and Blackwater Swamp is afforded by current land use controls. Both areas are within the 100-year flood plain zone and are subject to the Flood Plain District by-law adopted in 1985. Permanent structures and filling are prohibited in the zone. Only agricultural, conservation or recreation uses are permitted. Additional land acquisition in Blackwater swamp - the home of the southern-most colony of the Black Spruce within the American White Cedar bog and swamp of central Kingston would be valuable however, to ensure lasting protection of this regionally unique ecosystem. Some assessment of this potential is underway (2008).

Additional protection is required for the Indian Pond, Wolf Pond, and Muddy Pond areas, Silver Lake and the Jones River, as well as the tributaries south of Brook Street. The first step in protecting these areas should be to seek conservation restrictions from landowners. Such restrictions should be sought for all land around Indian Pond and the wetland to the north of the pond. A 300-foot buffer between surface water and septic systems is recommended to prevent eutrophication by phosphorous loading. The Sisters of Divine Providence, the

owners of all land surrounding Muddy Pond, have been working with the Nature Conservancy and the Natural Heritage Program of the Department of Fish & Wildlife to develop a protection strategy for the globally rare Muddy Pond habitat. The Town of Kingston Water Department (KWD) has had some negotiation with the Sisters as KWD is interested in developing a new water source—the Muddy Pond well site—near the pond. It is important that the Town of Kingston stay abreast of these discussions and play whatever part necessary to ensure that this unique and fragile ecosystem be protected—including limitations on well pumping. The construction of Route 44 on the ridge several hundred feet above Muddy Pond will pose a significant threat. Last minute plan changes to the stormwater system (required by Kingston citizen activists) for this roadway may or may not have averted a potentially disastrous erosion of the steep hillside toward the pond. A monitoring program should be implemented in order to prevent any accidental alteration to this critical habitat.

At this time Indian Pond has no organization or committee to monitor it. No water quality tests are being done. The obvious proliferation of the aquatic weeds in the pond is causing the reduction of dissolved oxygen levels. An aquatic habitat assessment of the pond conditions should be undertaken. Indian Pond, Little Mink Hole and Little Smelt Pond were sites reexamined by the U Mass Amherst Acid Rain Project. Results can be viewed at <http://www.umass.edu/tei/wrrc/arm.html#results>. These coastal plain ponds show extreme acidic conditions.

Results from the 2001 sampling for the Acid Rain project - which was a repeat of the work done twenty years ago on ponds across the Commonwealth - are shown below for the Kingston sites. The dates were April 20 and July 15. The number 5.18 and 5.00 for Indian Pond is the pH readings on the days listed with the second number indicating the degree of change from the previous reading.

Kingston Indian Pond	04/22/01	5.18	0.80	07/15/01	5.00	0.2
Kingston Little Mink Hole	04/22/01	4.32	-0.90	07/15/01	4.3	-1.1
Kingston Little Smelt Pond	04/22/01	5.45	0.40	07/15/01	4.96	-.049

### Vernal pools

Temporary ponds or pools that contain water for two or more months in the year, but dry up or come very close to drying up during the summer months, are probably vernal pools. They cannot support a fish population, but they do provide important breeding and feeding habitats for many unique biological communities.

Fairy shrimp, clam shrimp, fingernail clams, caddis flies, and other aquatic insects, turtles, frogs, toads, and salamanders depend on vernal pools. Vernal pools are particularly interesting because of the many kinds of animals that require them for breeding. Most of these animals cannot successfully reproduce anywhere else. These pools appear year after year in local depressions and

species, such as the spotted salamander and the wood frog, return early each spring to these same pools to reproduce. If these temporary pools are filled in by a landowner or developer, the salamanders and wood frogs will return the following spring are likely to perish. Since many of the animals that use these pools to reproduce follow distinct migration routes, finding another pool, even nearby, is very unlikely. These pools and therefore the creatures that use them are rapidly disappearing across the State. Because these pools support a wide range of species they are critical to ecosystem function. More people must be made aware of the importance of vernal pools as special habitats for these creatures and as an important natural resource for the community.

The Massachusetts Natural Heritage Program (a division of the Fisheries and Wildlife Department) recognizes vernal pools as important wildlife habitats and upon receiving the complete information from interested citizens, conservation commissions, professional biologists, and others, will certify these vernal pools. Certification is intended to provide an element of protection under the Wetlands Protection Act, and do receive special protection against discharges of fill, storm water, or other substances under the Massachusetts Surface Water Quality Standards.

By the end of 1995, the Conservation Commission and concerned citizens certified a large number of vernal pools in Kingston. However, many more potential pools still need to be examined and certified in the near future to aid in their protection. A list of the vernal pools and their locations are on record at the Conservation Commission. The locations will also be mapped on the State GIS Maps. Recent efforts by the Natural Heritage and Endangered Species Program produced digitized orthophoto maps of each town with potential vernal pools located. The Program distributed diskettes and booklets to municipalities. Kingston should mobilize an effort to investigate these potential sites and document any that can be accessed in order to protect these important habitat areas. Persistent loss associated with non-permitted development, such as at Dukes Hole, must be stopped.

#### River Restoration

Since incorporation of the Town of Kingston in 1726, residents have build dams and conduits constraining river flow. They have dumped waste products from mills and forges into the flowing waters. The majority of pipes carrying stormwater from streets in Kingston discharge dirty water to the river. The majority of residents in central Plymouth County also consume their daily ration of water supply from the Jones River basin. The result– depletes the river of flow, creates stagnant and eutroifying conditions behind dams and leaves a community of fish transformed from sea run species to pond species. The Jones River Watershed Association has gone to considerable effort to describe the problem, but it is up to the Town to repair it. Kingston and the Division of Marine Fisheries replaced the fish ladder at the Elm Street dam in the summer of 2001. The town has begun the effort to clean up sewerage and stormwater

discharges in the coastal part of town. However, recently the Board of Health has adopted a policy of allowing the development of new septic systems in the sewer district, because the sewer is at capacity. Many home owners, and even town boards fail to understand the need to control on-site waste from entering sensitive environmental areas, and the impact of land clearing, the development of impervious areas, and application of fertilizer and other soil amendments. Education of these impacts is very much needed, and new protective strategies are in order.

River restoration efforts are in planning and implementation stages (2008) and are being coordinated with state agencies, the Conservation Commission and Fish Committee through JRWA. Some dams may need to be removed or breached; some tidal restrictions should be enlarged; sedimentation and pollution from stormwater must be abated; fish habitats must be restored; streams must be maintained and in some cases, vegetation must be removed. The town has to develop a consensus and a program for restoring the river to the degree that it can at least sustain healthy fish populations of species and variety in keeping with its tidal reach into the Gulf of Maine. The by-product of this effort will also be increased productivity of all the marine resources including shellfish.

#### Public Water Supply Protection

A Water Resources District zoning by-law has been adopted for the zones of contribution to Kingston's public supply wells to protect the groundwater that enters the drinking water supply from contamination by hazardous and toxic chemicals and excessive nutrient loading.

On-site sewage disposal and lawn fertilizers are the most significant sources of nitrate-nitrogen in groundwater in this region. The only way to control nitrate-nitrogen concentrations is to depend on recharge volumes to dilute loading. The loading must be balanced against the recharge to ensure that the legal limit of 10 mg/l (milligrams per liter) maximum in drinking water is never exceeded. The planning standard most commonly used in this region is 5mg/l. This is based on research done in conjunction with the Long Island 208 plan based on the variability of nitrate-nitrogen concentrations in groundwater which determined that for a supply well to conform to the 10 mg/l standard 90% of the time, the average concentration would have to be less than or equal to 6 mg/l. Several nitrate-loading formulas have been developed to determine a safe density of development in zones of contribution to public supply wells.

As recommended by Whitman and Howard (1987), zones of contribution for potential future well sites have been delineated and included in the water resources district. Now that the delineation of the zones of contribution is complete, the town has the information needed to conduct further studies aimed at protecting public water supply quality. The map of reference is "Water Resources Map Protection districts and Public Wells Town of Kingston Massachusetts, March 1990" by Harvard Design and Mapping Company, Inc. The Zone II

Kingston GIS rendition of this map, by the Town Planner, is attached to this Plan Update.

The Water Resource District bylaw may shift development pressure to other areas of town with less stringent zoning. If recharge areas to future well sites are not protected now, they may be unavailable as future water supplies. Portions of the public water supply watersheds for the surface supplies serving the residents of Brockton and Whitman fall within the boundaries of Kingston. Water supply protection by-laws and regulations should apply to these areas as well as those serving only Kingston. The Silver Lake and Pine Brook watersheds should be included in the Water Resource District by-law. The Old Colony Planning Council and City of Brockton periodically work with the Kingston Water Commissioners to achieve this. Kingston has requested both mapping assistance and legal indemnification before bringing the Silver Lake watershed to town meeting for inclusion in the overlay district. So far, no agreement has been reached. Additionally, the septic system setback of 100 feet between surface water supplies or tributaries and septic systems required by Title V should be evaluated and possibly increased through a Board of Health regulation. Although Kingston Zoning By-laws prohibit the construction of a septic system within “100 feet of the annual spring high water” (5.2.10.1), this regulation must be enforced. Periodic education of town officials on the rules and regulations of the town would appear to be useful.

Water restrictions are increasingly necessary, especially during dry periods, in order for the town to comply with conditions of its Water Management Act permits. In order to escape regulation, and also to avoid high water sue fees for residential properties on town sewer, many homeowners are installing on-site private wells for irrigation purposes. This is a dangerous practice, and reflects a failure to understand that all groundwater in the area is interconnected. Unregulated use of groundwater supplies can impact local river conditions, vernal pools and wetlands. The town may be wise to consider requiring private well owners to conform to water-use restrictions.

### Wind Resources

Kingston has a moderate wind resource advantage, and in 2007 took the first steps to create wind overlay districts. As with water resources, wind resources, sufficient to generate energy are limited and site specific. Wind is not available everywhere in adequate velocity and consistency to develop wind energy. Kingston does through have “moderate” wind capacity and is studying what other areas to set aside to allow for the development of commercial wind to support municipal needs. Camp Nekon, the coast and south Kingston, and perhaps areas near Silver Lake have potential. Kingston’s Green Energy Committee will lead the effort to define the resource.

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