NATURAL RESOURCES

BACKGROUND

Natural resources are the very stuff that supports life. Clean air, clean water, fertile soil and healthy habitats are essential to mankind's continued survival. As one of the remaining rural towns in Southeastern Massachusetts, Rochester holds at least one key to the good health of the area: Our watersheds provided drinking water for Marion, Mattapoisett, and Fairhaven, and are part of the watershed that supplies Acushnet and New Bedford. This circumstance alone is incentive sufficient to encourage protection of our resources. Add the significant contribution of healthy river systems to offshore fisheries, and our contribution to the physical and economic well-being of the region and the motivation becomes substantial.

Rochester has abundant natural resources that include pristine surface waters, high-yield ground water aquifers, wetlands serving as habitat for wildlife and as protection for our water resources, extensive forests, agricultural lands, and mineral resources. Most of these have been described in detail in the *Open Space and Outdoor Recreation Conservation Plan* and are briefly summarized below.

In addition, the Town is blessed with areas where existing vegetative patterns and the topography provide pleasing views. These areas, referred to as "viewscapes" will be discussed further below.

PERSPECTIVE ON NATURAL RESOURCES

The Master Plan of 2000 stated that our primary goal for natural resources is to protect and safeguard the ponds, groundwater, wetlands, wildlife, and scenic viewscapes that so strongly contribute to Rochester's character. It went on to recommend the creation of aquifer districts, develop zoning and site plan review regulations that encourage environmental protection, review and update the earth removal bylaw and aggressively pursue ways to preserve viewscapes.

In the interim period, Rochester has created the Groundwater Protection District defined on the Zoning Map and controlled by Rochester Zoning By-Law Section XVII, has installed a comprehensive Site Plan Review by-law, appointed a Soil Board Agent and continues to refine the Earth Removal By-Law. The Planning Board has drafted a Tradable Development Rights (TDR) by-law to enable preserving viewscapes in exchange for slightly higher density subdivisions and continues to work on the necessary details for such a concept to work.

Although there has been progress, the Goals and Objectives remain the same.

SURFACE WATER

Rochester's surface waters include eight great ponds larger than 10-acres. These are Great Quittacas, Little Quittacas, Snipatuit, Long, Leonard's, Mary's, Snow's, and Hathaway Ponds. Some of these ponds serve as water supplies for the City of New Bedford (Great and Little Quittacas). Others serve as reservoirs for agricultural uses and areas for fishing and recreation. Snipatuit Pond, a dominant feature of the northwest quarter of town, covers the largest area of all the lakes and ponds although it is very shallow and is

not of drinking quality. While it is popular for fishing and boating, it is not widely used for swimming. Mary's Pond, considerably smaller, is deep and clear. Long Pond, Snow's Pond, Leonard's Pond and Hathaway's Pond are also smaller, with little to no public access. Both Mary's Pond and Snow's Pond are believed to be "Kettle Holes" formed by glaciers as a large chunk of ice became buried in soil deposits and subsequently melted, leaving a very deep indent.

COASTAL PLAIN PONDS

Both Mary's Pond and Snow's Pond are classified as Atlantic Coastal Plain Ponds by the Massachusetts Natural Heritage and Endangered Species Program. These ponds occupy depressions in glacial outwash plains that are directly linked to the underground aquifer, creating unique shore environments. Both ponds host species judged to be endangered such as the globally rare but locally abundant Plymouth Gentian (*Sabatia Kennedyana*) which grows from the shallow water across a broad expanse of sand.

GROUNDWATER

Rochester is blessed with an ample supply of good-quality water. It is unique in that two important aquifer recharge areas – the Mattapoisett and Sippican Rivers – comprise 50% of its total land area. The Mattapoisett River aquifer is the principal source of drinking water for Fairhaven, Marion, Mattapoisett and Rochester, and a secondary source for Acushnet. At the Annual Town Meeting of June 2002 the town adopted a Ground Water Protection District to control potentially adverse uses of the Zone II watershed supplying the existing wells in the Mattapoisett River valley. The Sippican River aquifer is a source of drinking water for the town of Marion.

The Town of Marion owns five wells in Rochester. Three are located in the Sippican River basin, southwest of Mary's Pond; two are located in the Mattapoisett River basin. According to an agreement with Marion, Rochester is entitled to 50% of the water these well's produce.

The City of New Bedford owns an 850+ acre preserve fronting Great and Little Quittacas Ponds in the northwest corner of Rochester. The city acquired these parcels many years ago to protect its water supply. Collectively known as The New Bedford Water Works, this area serves as a reservoir for the city.

Particular attention needs to be given to preserving aquifer recharge areas, investigating nitrogen loading of ground water by on-site subsurface sewage disposal systems, and encouraging individual projects that ensure the most protection of resources while safeguarding the property rights of landowners. In some cases, this may mean outright purchase of a critical property, perhaps through a combination of grants, matching funds, and donations.

WETLANDS

Wetlands are generally recognized as lands that have water at or near the surface much of the year. They are identified by the presence and duration of water, soil types, and vegetative cover. Approximately 25% of Rochester's surface is covered by wetlands, including cranberry bogs. Major non-agricultural wetlands include Forbes Swamp, Logging Swamp, Towsers Swamp, Cedar

Swamp, and Haskell Swamp, which together constitute approximately 1,000 acres of land.

The Massachusetts Natural Heritage and Endangered Species Program, a section of the Division of Fisheries and Wildlife, has recorded upwards of 2,700 wildlife species in Plymouth County. These include approximately 50 species considered to be threatened by development and recreation pressures or vulnerable because they occur only in rare or fragile habitats. Many of these rare, fragile habitats are located in Rochester and are listed in Section 4B of the 1996 *Open Space and Recreation Plan*.

FISHERIES

With its headwaters in Snipatuit Pond, the Mattapoisett River is essential to the survival of alewives in the tri-town (Rochester, Marion, and Mattapoisett) area. The herring run, one of the most productive in the Buzzards Bay watershed, is protected and managed by both state and local officials. In 1987 the State Division of Marine Fisheries constructed a fish ladder at Snipatuit Pond to better enable the migration of alewives up the Mattapoisett River to spawn.

MINERAL RESOURCES

Rochester's soil is notably fertile farmland composed of sand, gravel, and stone characteristic of glacial till. Its geologic setting is responsible for large deposits of sand and gravel. The single most limiting factor for agricultural use has been the "boniness" of soils, meaning difficult mixtures of gravel, rock and clay, and the tendency of some of the more sandy soils to drain too readily during drought periods. A major trend in the recent past is the excavation and sale of sand and gravel followed by the creation of cranberry bogs on the excavated parcels.

There are five major soil types found in Rochester usually discussed in terms of their limitations:

1. The Peat –Scarboro-Sanded Muck-Brockton Association consists of poorly drained organic and mineral soils usually associated with swamps. This association accounts for 30% of the soils.;
2. The Essex-Gloucester firm substratum-Scituate Association (hardpan), which makes up 10% of the soils.;
3. The Hinkley-Carver-Merrimac-Windsor Association (35%) poses only slight limitations for development.;
4. The Gloucester Association (12%) is gravelly and stony and poses only moderate limitations for development.;
5. The Hollis-Charlton-Scituate Association (4%) is shallow to bedrock with some well-drained pockets.

Soil limitations and locations in Rochester are shown on the Soil Limitations Map in the *Open Space and Recreation Plan*. Approximately 40% of the soils in Rochester pose severe limitations for onsite sewage disposal.

WOODS AND UNDEVELOPED WILDERNESS

Undeveloped acreage is a recreational opportunity which defines who we are, either by how we use this resource today, or how we used it as children and young adults. It's where we went to escape authority as kids, where we go for hunting, horseback riding, walking or to just "take a constitutional".

There is an irreplaceable value to these experiences that make us what we are. For those of us who use it, the loss to development is tremendous.

EXISTING NATURAL RESOURCE CONSERVATION PLANS

Several regulatory programs are charged with protecting the natural resources within the Town.

The Town of Rochester Conservation Commission has jurisdiction, under the state Wetland Protection Act, over activities within and adjacent to wetlands areas. The Conservation Commission may regulate construction within 100 feet of these areas. At the 2007 Fall Special Town meeting the town approved a 25 foot "no disturb" zone within the "Bordering Vegetative" boundary to wetlands, allowing room for variances in unusual circumstances.

The Towns of Acushnet, Fairhaven, Rochester and Marion have joined together to support the Mattapoisett River Valley Protection Commission. This Commission is entrusted with protecting the abundant groundwater resources within the Mattapoisett River Valley.

In 1996 the Town of Rochester formed a Soil Board to regulate activities associated with the extraction of earth minerals.

VIEWSCAPES OR SCENIC RESOURCES

Once an agricultural community, Rochester is still noted for its open fields, farmlands, and cranberry bogs which are highly responsible for defining the town's character. The natural appeal of its scenic resources reflects this agricultural legacy. Rochester citizens have made it clear that the viewscapes are an important resource for their continued enjoyment of the Town

Our Town's rural character is of great importance. To retain even the illusion of our rural past, the remaining undeveloped spaces on the roads we all use daily must remain natural. Although retaining a large percentage of our backland undeveloped has an emotional appeal, it has little impact to most of us in our daily lives. Using many methods that are available to us and implemented in other towns, we must encourage permanent preservation of as much of our natural resources as possible in sensitive areas.

SUBSISTENCE RESOURCES

An author and prognosticator, James Howard Kuntzler, outlined a very serious, though possibly distant situation in his book *The Long Emergency*. His thesis is that liquid and gaseous hydrocarbon supplies are on the wane and even those supplies are controlled by unstable and/or unfriendly peoples. He believes that alternative energy sources cannot be developed soon enough or plentifully enough and that in twenty years, or maybe sooner, we will be back to the local land for food in the form of the Victory Gardens of World War II or such as Cuba's food programs under Castro after the Soviets departed.

According to the US Department of Agriculture, home food production hit an all-time low in 2005, down a full 20% from 2004. They found that ingredients for the average meal now travel 1500 miles from field to fork, 25% further than they did 2 decade ago using 17 times more fossil fuels than a meal made with local ingredients. Under severe fuel

constraints suggested by Mr. Kuntzler, this simply cannot continue.

Rochester is extremely well suited to handle such an unfortunate outcome, should it occur. With ample groundwater and many remaining open fields we could grow potatoes, turnips, etc. and even support livestock.

Noting that woods floor, once the trees are cleared, is good for little more than leaf crops for several years, our open fields and even the bogs, since with no fuel there would be little market for berries, would make ideal farms.

With two rivers which hosted multiple mills, Rochester has some harnessable natural energy source for if and when the lights go out.

Let's hope that James Howard Kuntzler is wrong. The better part of wisdom, however, suggests that we hedge our bets and pursue at least selected sustainability goals.

IMPLEMENTING ACTION TASKS TO MOVE TOWARD SUSTAINABILITY:

CONSERVATION COMMISSION:

1. Educate the public about the need for protection of all water resources, with regard to wetlands and surface water.

2. Educate the public about the environmental damage caused by conventional lawn care as well as the importance of maintaining wells including the implications of road salting.

3. Continue to pursue a broad array of land preservation activities through the Rochester Conservation Commission, the Rochester Land Trust and many interested citizens.

PLANNING BOARD:

1. Identify and save some undeveloped space for those who need "constitutionals" in wild space.

2. Propose a Tradable Development Rights (TDR) by-law allowing sale of development rights on undeveloped lots on public ways to save the important viewscapes.

3. Develop zoning, site plan review regulations, and special permit decision criteria that encourage environmental protection, preservation of natural vegetation, and special wildlife areas.

4. Study and recommend more Scenic Road designations as is specified in MGL 40 15D as a way to limit road widening and excessive improvements which encourage more aggressive and faster traffic.

5. Generate by-laws designed to retain parcels suitable for truck-gardens to provide local-source produce.

6. Protect Sippican River, the municipal wells therein, plus adjoining medium/high yield aquifers in parallel with the current Ground Water Protection District and strengthen the provisions.

7. In conjunction with Board of Health, begin promotion of wastewater recharge concepts for Rochester-source water currently discharged into Buzzards Bay.