

2 Existing Conditions

The following section inventories existing conditions within the project study area. The evaluation of existing conditions was completed utilizing aerial orthophotographic mapping, Town and State geographic information system (GIS) data, and field investigation. This inventory includes natural resources, open space and cultural resources, land use and development, and assessment of local roadways within the study area.

2.1 Natural Resources

The purpose of this section is to document the types of natural resource areas within the study area and identify potential environmental issues early in the project development process.

Trail development will require measures to avoid and minimize impacts to natural resources. Potential impacts to these resource areas need to be considered when evaluating alternatives. Location specific designs aimed at the protection of these resources are critical to enabling a trail to coexist within the diverse resource base.

2.1.1 Topography and Vegetation

As can be seen on the locus map in Figure 3, the terrain in the watershed property varies widely. This rolling terrain has resulted in wetlands and ponds at low points and the prospect of wind power generation at high points. The only cleared areas within the watershed area are along the powerline corridor and well access and fire roads. The remainder of this area is thickly vegetated by a combination of new and mature growth. Existing hiking trails traverse the watershed property.

The Route 28 corridor is lined with varying depths of woodland vegetation. In most areas, the roadside is relatively clear of mature vegetation. The adjacent cut and fill slopes transition over the length of the corridor and range from an elevation difference of 2 feet to well over 20 feet. Only the section of study area between Eldredge Park Way and Main Street has limited vegetation. Local roadways in this area are relatively level with some hilly sections.

Clearly, trail construction will result in the physical alteration of existing vegetative communities within the designated limits of work. Along some alternatives, disturbance will be minimal due to the relative absence of vegetation. In other areas, vegetative disturbances will be more substantial due to the extent of existing vegetative growth.

A representative cross section, which is typically used on other trail projects in the Commonwealth, calls for the removal of tree branches within a 12 to 14-foot vertical clearance of the trail surface. Removal of this mid-story vegetative layer will still allow the overstory tree canopy to remain. One of the design goals should be to protect mature trees along the corridor in order to preserve the natural canopy. Retaining the natural canopy will help sustain existing physical conditions (light, wind, temperature) in adjacent forested areas. Further, retaining a vegetative buffer alongside the trail will help blend the trail into its natural surroundings.

2.1.2 Wetland Resources

A number of wetland resource areas protectable under the Federal Clean Water Act, Massachusetts Wetlands Protection Act, and the Orleans Wetlands By-law and Regulations are located within the project study area (see Figure 6).

These wetland resource areas include:

- Bordering Vegetated Wetlands (BVW)
- Isolated Vegetated Wetlands (IVW)
- Bank associated with Intermittent and Perennial Streams
- Land Under Waterbodies and Waterways (LUW) associated with perennial streams and ponds
- Riverfront Area associated with perennial streams
- Bordering Land Subject to Flooding (BLSF), otherwise known as the floodplain

Based on a review of available MassGIS mapping, United States Geological Survey (USGS) mapping, and other sources, the following provides a description of each resource area and typical locations within the study area where such resources occur.

Bordering Vegetated Wetlands (BVW) are defined as freshwater wet meadows, marshes, swamps, and bogs that border on rivers, streams, ponds, and lakes. There are numerous BVW areas within the study area. The Orleans Wetlands By-law protects both bordering and isolated (or nonbordering) vegetated wetlands.

Isolated Vegetated Wetlands (IVW) are freshwater wet meadows, marshes, swamps, and bogs that do not necessarily border on rivers, streams, ponds, and lakes. These isolated (or nonbordering) wetland resource areas are protectable under the Orleans Wetlands By-law. Other IVWs may also be present that are not depicted on the MassGIS mapping.

Bank abuts and typically confines water bodies such as intermittent and perennial streams, ponds, and lakes. Bank within the study area is associated with Wash Pond, Gould Pond, other watershed ponds, Crystal Lake, Boland Pond, and one (1) unnamed perennial stream between Gould Pond and Arey's Pond.

Land Under Waterbodies and Waterways (LUW) is the land beneath rivers, streams, ponds or lakes.

Riverfront Area is the area of land that extends 200 feet laterally from a river's (and perennial stream's) mean annual high water line. According to the Wetlands Protection Act, rivers and streams shown as perennial on the USGS map are presumed to be perennial. The USGS map shows the connection between Gould Pond and Arey's Pond as a perennial waterway.

Bordering Land Subject to Flooding (BLSF) is the portion of the 100-year floodplain that extends beyond the limits of a BVW. Work within BLSF or the floodplain requires compensatory storage to ensure work will not cause flooding that will impact land owners or negatively impact other wetland resource areas. As shown in Figure 7, a review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate

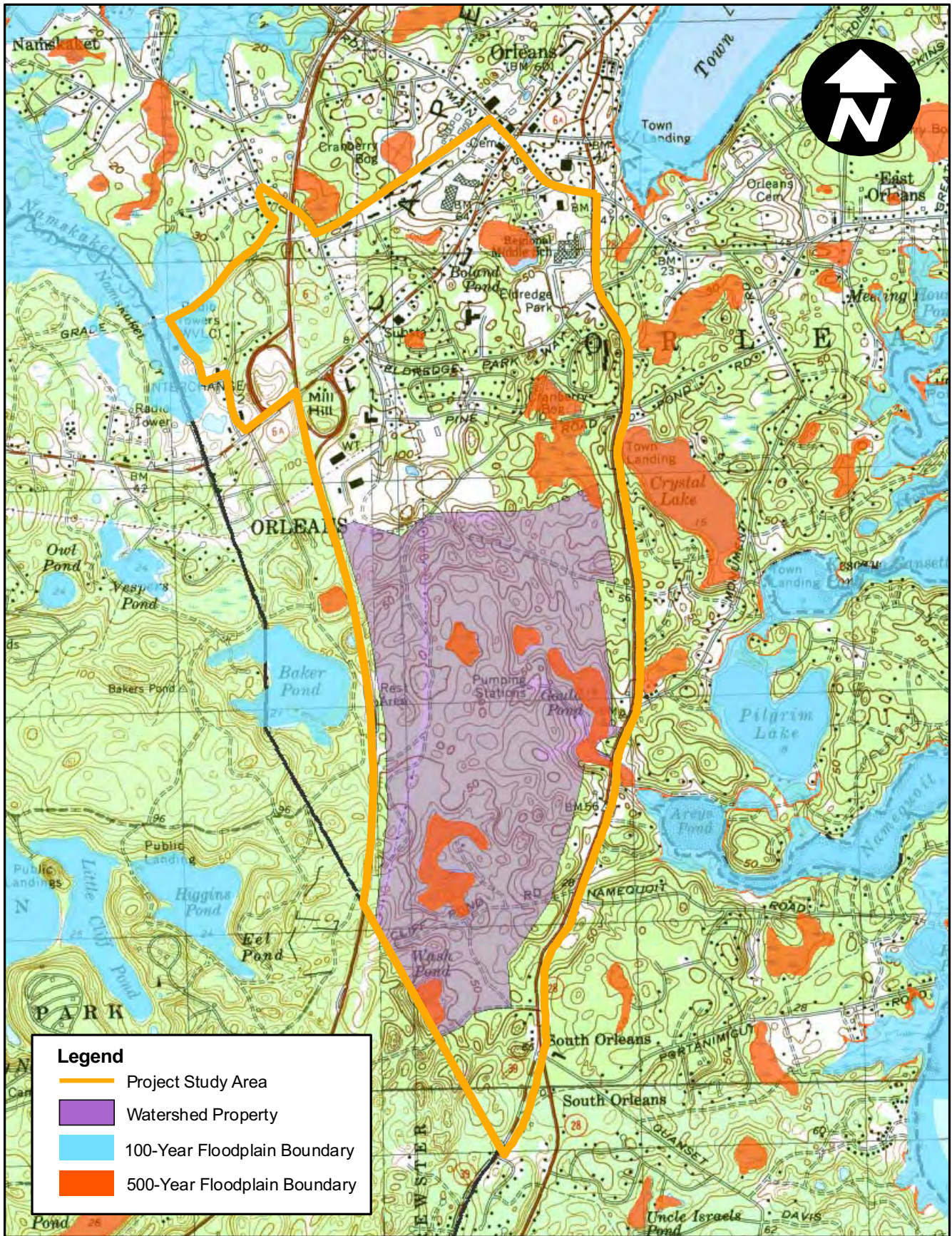


Figure 7: Floodplain Boundaries
 South Orleans to Orleans Trail Study
 Intersection of Routes 28/39 to Main Street
 Orleans, Massachusetts

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Maps revealed that there are no areas inundated by 100-year flooding along the alternative alignments under consideration. Only areas inundated by a 500-year storm event occur within the project area. The 100 and 500 year floods are "statistical" flood events; that is, they are statistically likely to occur once in every 100 or 500 years, although they may occur much more frequently. The State Wetlands Protection Act and the Orleans Wetland By-law only regulate the 100-year floodplain.

Vernal Pools, and vernal pool habitat are confined basin depressions which, at least in most years, hold water for a minimum of two continuous months during the spring and/or summer, and which are free of adult fish populations, as well as the area within 100 feet of the mean annual boundaries of such depressions. These areas are essential breeding habitat, and provide other extremely important wildlife habitat functions during non-breeding season for a variety of wildlife species.



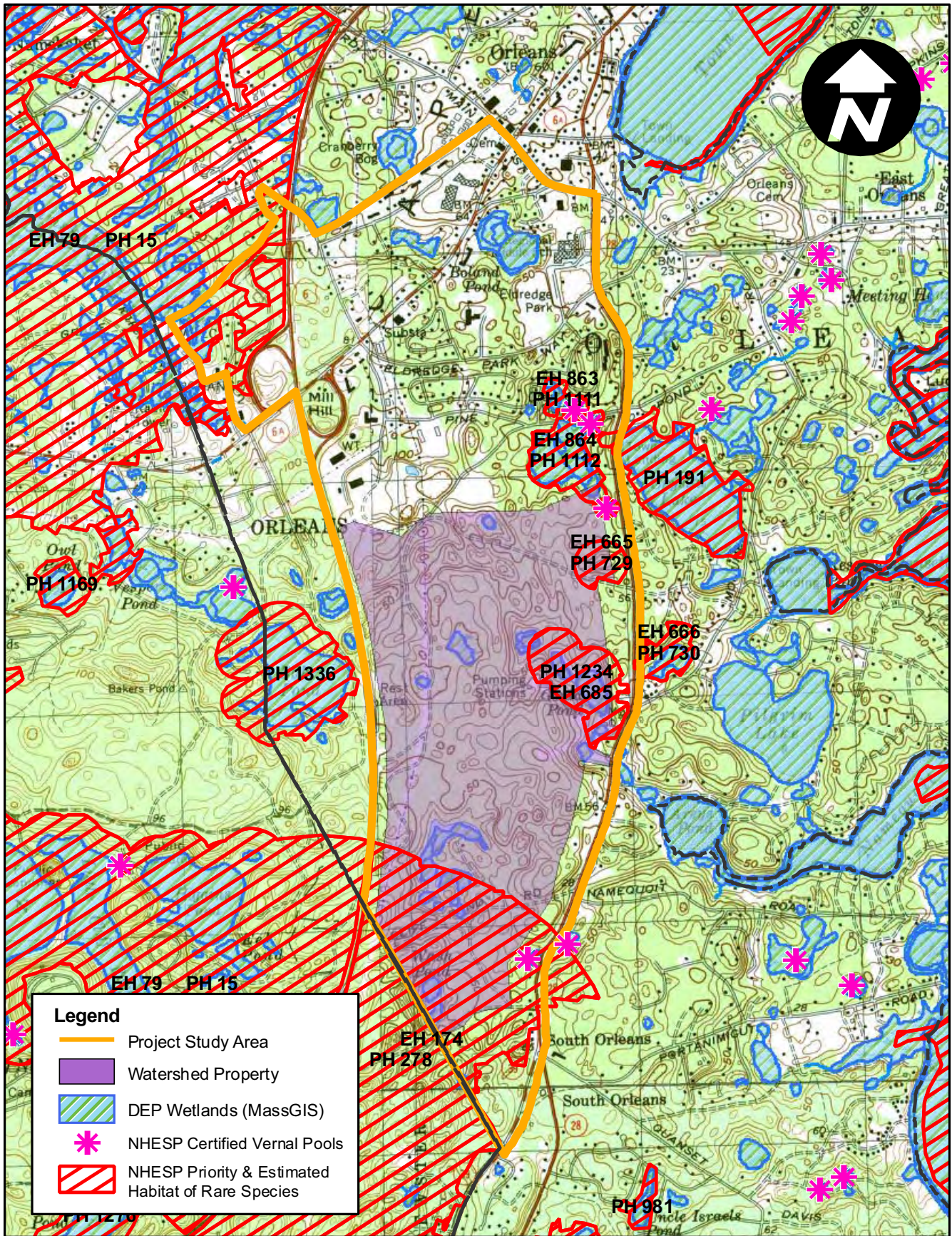
**Figure 8: Vernal Pool in
John Kenrick Woods Conservation Area**

A review of the Natural Heritage Atlas and the MassGIS Natural Heritage and Endangered Species Program (NHESP) mapping indicates that there are a total of five (5) certified vernal pools (CVP) along the Route 28 corridor between Eli Rodgers Road and the Finlay Road area. As shown on Figure 9, four (4) vernal pools certified as such by the NHESP occur on the west side of Route 28 (#s 3136, 2492, 3130, 3131) and one (1) vernal pool (# 3135) is located on the east side of Route 28. Vernal pools certified by the NHESP are protected under the Wetlands Protection Act regulations, but only to the extent that they also are located within an area subject to regulatory protection, i.e. the pools occur within BVWs or those that constitute isolated land subject to flooding. Consequently, detailed site-specific investigations will be required to determine the jurisdictional status of each vernal pool. Also, all CVPs constitute Class B Outstanding Resource Waters (ORW). As discussed in Section 2.1.6, ORWs are afforded higher protection to maintain their existing uses and water quality.

2.1.3 Rare Species Habitat

FST contacted both the Massachusetts Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program (DFW-NHESP) and the United States Department of Interior Fish and Wildlife Service (USFWS) regarding the known presence of any federally or state-listed rare species within the project study area. The response letter from each agency is included in Appendix C (under separate cover).

Correspondence received from the DFW-NHESP dated December 17, 2008 indicates that Priority Habitat (PH) and Estimated Habitat (EH) for the seven state-listed species, listed in Table 1, occurs within the "project site or a portion thereof." As shown in Figure 9, the habitat for these species encompasses the southern end of the study area and wetland and upland areas located both east and west of the Route 28 corridor.



Orleans USGS Quad

0 1,000 2,000 Feet
 Scale:

Figure 9: Rare Species Habitat
 South Orleans to Orleans Trail Study
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Table 1: State-Listed Rare Species

Scientific Name	Common Name	Taxonomic Group	State Status	Polygon Code
<i>Terrapene Carolina</i>	Eastern Box Turtle	Reptile	Special Concern	PH278 / EH174 PH15 / EH79
<i>Malaclemys terrapin</i>	Diamond-backed Terrapin	Reptile	Threatened	PH15 / EH79
<i>Carex mitchelliana</i>	Mitchell's Sedge	Plant	Threatened	PH15 / EH79
<i>Spartina cynosuroides</i>	Salt Reedgrass	Plant	Threatened	PH15 / EH79
<i>Papaipema sulphurata</i>	Water-Willow Stem Borer	Butterflies & Moths	Threatened	PH1112 / EH864
<i>Sagittaria teres</i>	Terete Arrowhead	Plant	Special Concern	PH1112 / EH864
<i>Lipocarpa micrantha</i>	Dwarf Bulrush	Plant	Threatened	PH1112 / EH864
<i>Sabatia kennedyana</i>	Plymouth Gentian	Plant	Special Concern	PH1112 / EH864 PH1234 / EH685
<i>Enallagma laterale</i>	New England Bluet	Damselfly	Special Concern	PH729 / EH665
<i>Enallagma recurvatum</i>	Pine Barrens Bluet	Damselfly	Threatened	PH1234 / EH685
<i>Anax longipes</i>	Comet Darner	Dragonfly	Special Concern	PH1234 / EH685

Source: DFW-NHESP letter dated December 17, 2008 (See Appendix C).

The PH and EH polygon numbers included in Table 2 correspond to the labels shown on the hatched habitat areas shown on Figure 9.

In addition, review of the Natural Heritage Atlas and the MassGIS NHESP Data Layer indicate that there are certified vernal pools (CVP) located on the east and west side of the Route 28 corridor between Eli Rodgers Road and Eldredge Park Way as shown on Figure 9.

In the letter from USFWS dated December 30, 2008, the USFWS stated that “based on information currently available to us, no federally-listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the US Fish and Wildlife Service are known to occur in the project area(s).”

2.1.4 Areas of Critical Environmental Concern

Areas of Critical Environmental Concern (ACEC) are areas within the Commonwealth where unique clusters of natural and human resource values exist and which are worthy of a high level of concern and protection. As described in the ACEC Regulations (301 CMR 12.00), the designation process comprises five steps:

- Nomination
- Review by the Secretary
- Public hearings
- Decision by the Secretary of Environmental Affairs, and
- Publication of notice of the results in the Environmental Monitor

The purpose of the designation process is to determine if the nominated area is of regional, state, or national importance or contains significant ecological systems with critical interrelationships among a number of components. After designation, the aim is to preserve

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and restore these areas and all Executive Office of Energy and Environmental Affairs (EOEEA) agencies are directed to take actions with this in mind.

The Pleasant Bay ACEC is approximately 9,240 acres in size spread out across four communities including Brewster, Chatham, Harwich and Orleans. Approximately 72% of the acreage is located in Orleans. As shown on Figures 10 and 11 the portion of ACEC within the study area is associated with Gould Pond and Crystal Lake. The landward extent of the Pleasant Bay ACEC is the 10 foot contour plus 100 feet and it includes wetland and waterbodies that outflow into Pleasant Bay.



Figure 11: Portion of Route 28 Near Lisa's Way Located Within Pleasant Bay ACEC

The Department of Conservation and Recreation (DCR) administers the ACEC Program on behalf of the Secretary and coordinates with other state agencies and programs. According to the DCR's website, ACECs are addressed in the Massachusetts Environmental Policy Act (MEPA) regulations at 301 CMR 11.03(11). The proponent of any project (as defined by the MEPA regulations) located within an ACEC must file an Environmental Notification Form (ENF) for MEPA review, unless the project consists solely of one single family dwelling. What this means in practical terms is that projects located within ACECs subject to MEPA jurisdiction require closer scrutiny than projects located outside of ACECs. Project review thresholds (for the size or type of a project) that require a proponent to file an ENF are reduced to include all projects located within an ACEC.

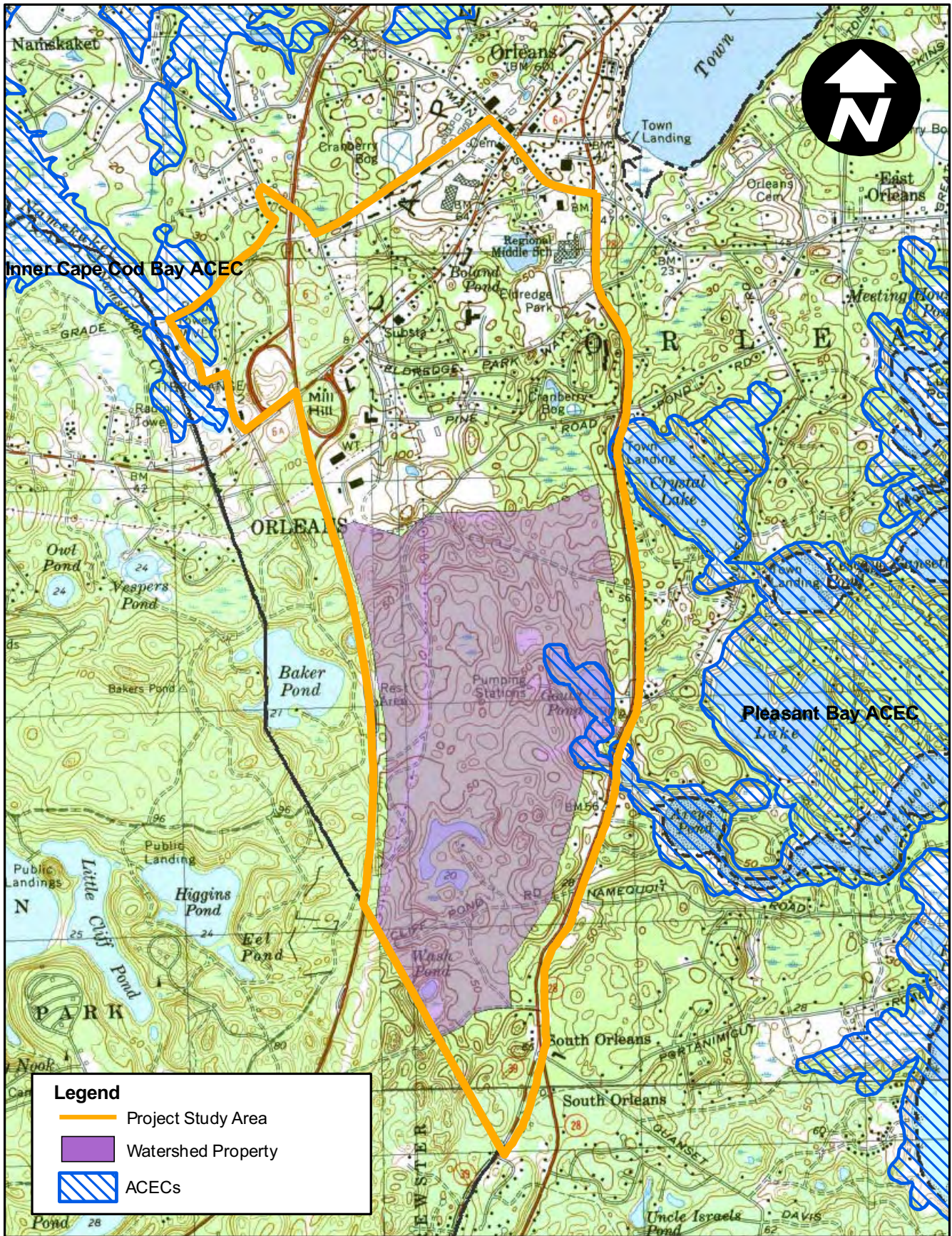
2.1.5 Public Water Supply Protection Area

As shown on Figure 12, the Town of Orleans watershed property is located on the west side of Route 28. This 500-acre parcel encompasses the majority of the southern half of the study area. This property was taken by the Town of Orleans in March 1962 for the purpose of providing a protected area for supplying water to residents.

The Town of Orleans has a total of eight (8) groundwater wells, seven (7) of which are located within the watershed property. These wells pump from the Monomoy Lens, a 66 square mile groundwater lens that forms part of the Cape Cod Sole Source Aquifer. The towns of Dennis, Brewster, Harwich, Chatham, and Orleans are served by the Monomoy Lens. Groundwater in the Monomoy Lens is replenished from rain or snow that seeps into the ground. The water percolates through the soil to reach the water table which is the surface of the groundwater lens.



Figure 13: Signage Along Route 28 Denoting Drinking Water Supply Area

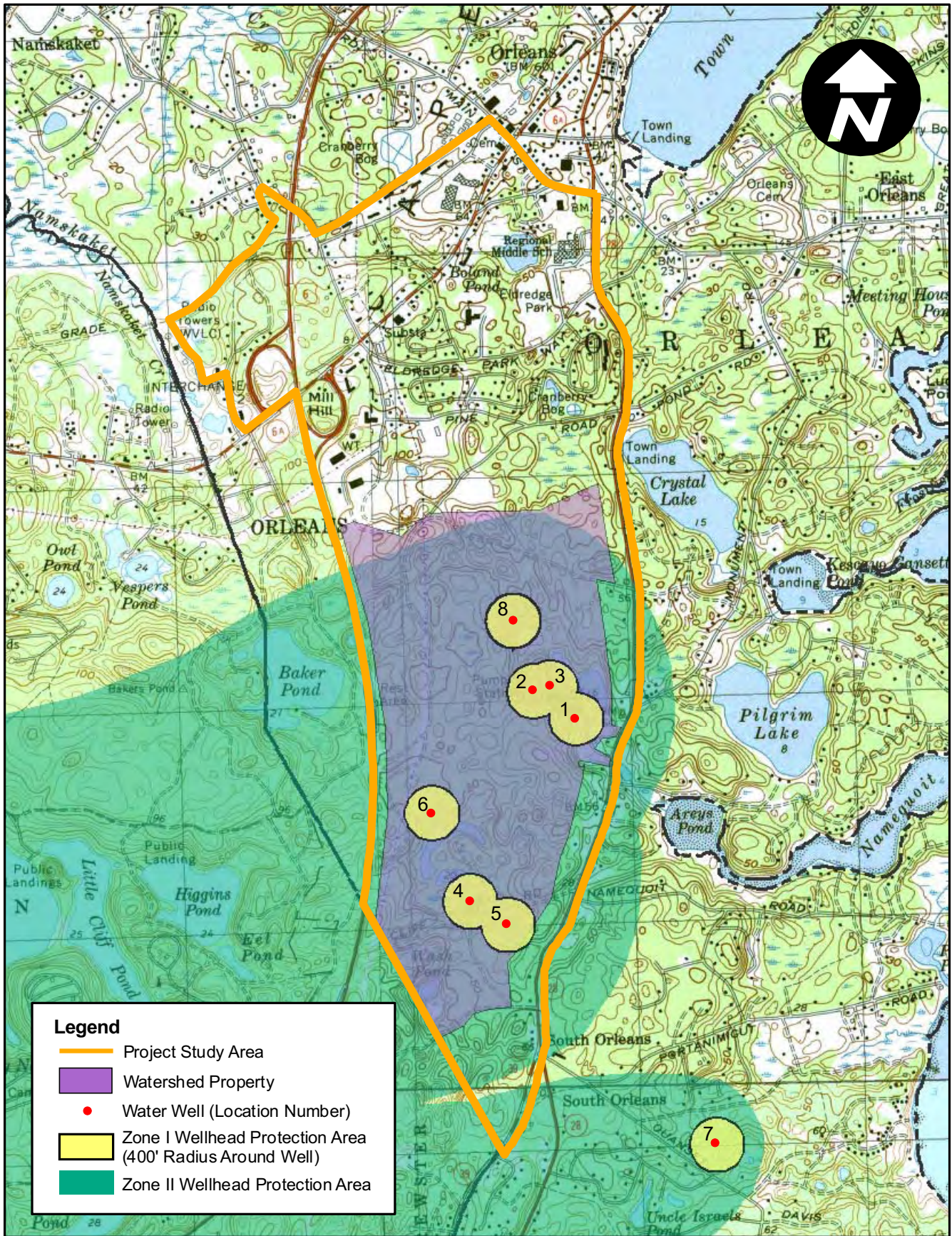


Orleans USGS Quad

Figure 10: Areas of Critical Environmental Concern (ACECs)

0 1,000 2,000 Feet
Scale:

South Orleans to Orleans Trail Study
Intersection of Routes 28/39 to Main Street
Orleans, Massachusetts



Orleans USGS Quad

0 1,000 2,000 Feet
Scale:

Figure 12: Public Water Supply Protection Area
South Orleans to Orleans Trail Study
Intersection of Routes 28/39 to Main Street
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The groundwater well sites have an associated Zone I protective radius of 400 feet (as shown on Figure 12). As noted in the State Drinking Water Regulations section 310 CMR 22.21(3)(b), current and future land uses within the Zone I shall be limited to those land uses that are both directly related to the public water supply and non-threatening to water quality. As part of this effort, it is also important to restrict access to the well site.

In addition, the larger watershed property and the area to the south fall within a Zone II groundwater protection area. A Zone II is the area of an aquifer that contributes water to a well under the most severe pumping and recharge conditions. This regulated area constitutes a stormwater critical area, as discussed in the next section.

2.1.6 Stormwater Critical Areas

Stormwater discharges to critical areas must utilize certain stormwater management Best Management Practices (BMPs) approved for critical areas. Critical areas include Outstanding Resource Waters (ORWs), shellfish beds, swimming beaches, cold water fisheries and recharge areas for public water supplies. These critical areas have the maximum practicable protection under the Massachusetts Stormwater Management Policy. Stormwater critical areas within the study area are shown on Figure 16.

Outstanding Resource Waters (ORW) include: surface Public Drinking Water Supplies, their tributaries and bordering vegetative wetlands; specified Areas of Critical Environmental Concern (ACECs); certified vernal pools; and, any other waters as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00.

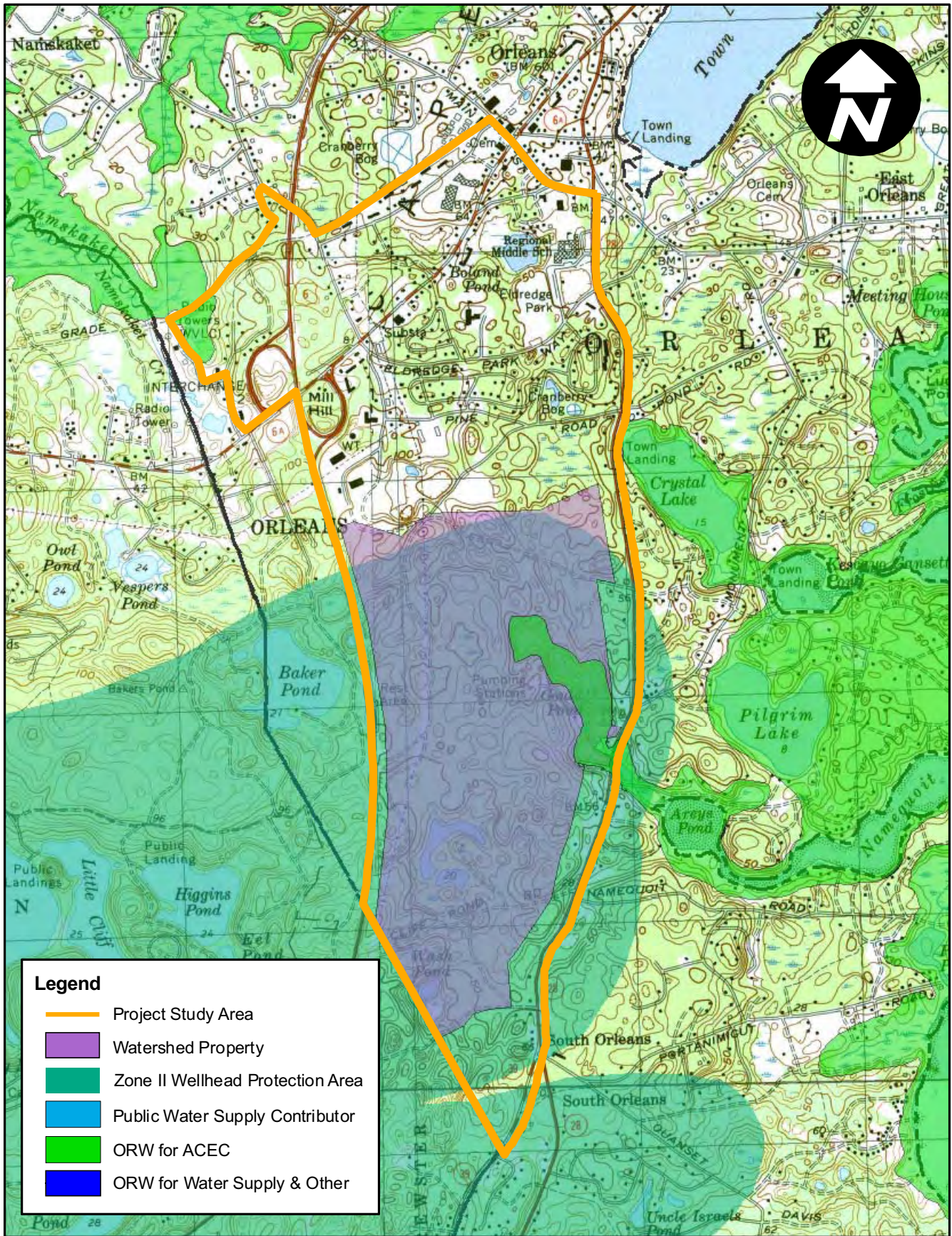
These waters constitute an outstanding resource as determined by their outstanding socioeconomic, recreational, ecological and/or aesthetic values and are afforded higher protection to maintain their existing uses and water quality. The waters of the Pleasant Bay ACEC are classified as Outstanding Resource Waters (ORWs). These waters extends from Pleasant Bay inland to Gould Pond and Crystal Lake and their surrounding subbasins. In addition, all certified vernal pools constitute Class B ORWs.



Figure 14: Well Site 6



Figure 15: Route 28 Stormwater Runoff



Orleans USGS Quad

0 1,000 2,000 Feet
Scale:

Figure 16: Stormwater Critical Areas
South Orleans to Orleans Trail Study
Intersection of Routes 28/39 to Main Street
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In addition, the portion of the study area from South Orleans to the northern limit of the watershed property is located within a Zone II Wellhead Protection Area (WPA) which is also a stormwater critical area. As stated in 310 CMR 22.02, a Zone II WPA is: “that area of an aquifer which contributes water to a well under the most severe pumping and recharge conditions that can be realistically anticipated (180 days of pumping at safe yield, with no recharge from precipitation).” WPAs are important for protecting the recharge area around public water supply groundwater sources. Stormwater discharges within a Zone II WPA also require the use of BMPs as provided for in the Massachusetts Stormwater Handbook.

2.1.7 Massachusetts Coastal Zone

The project study area is located within the Massachusetts Coastal Zone. Therefore, should this project receive federal funding, a letter will need to be issued to the Massachusetts Coastal Zone Management (CZM) Project Review Coordinator to determine if the project is subject to federal consistency review. Projects subject to federal consistency review must be consistent with CZM program policies.

2.2 Open Space



Figure 18: John Kenrick Woods Conservation Area



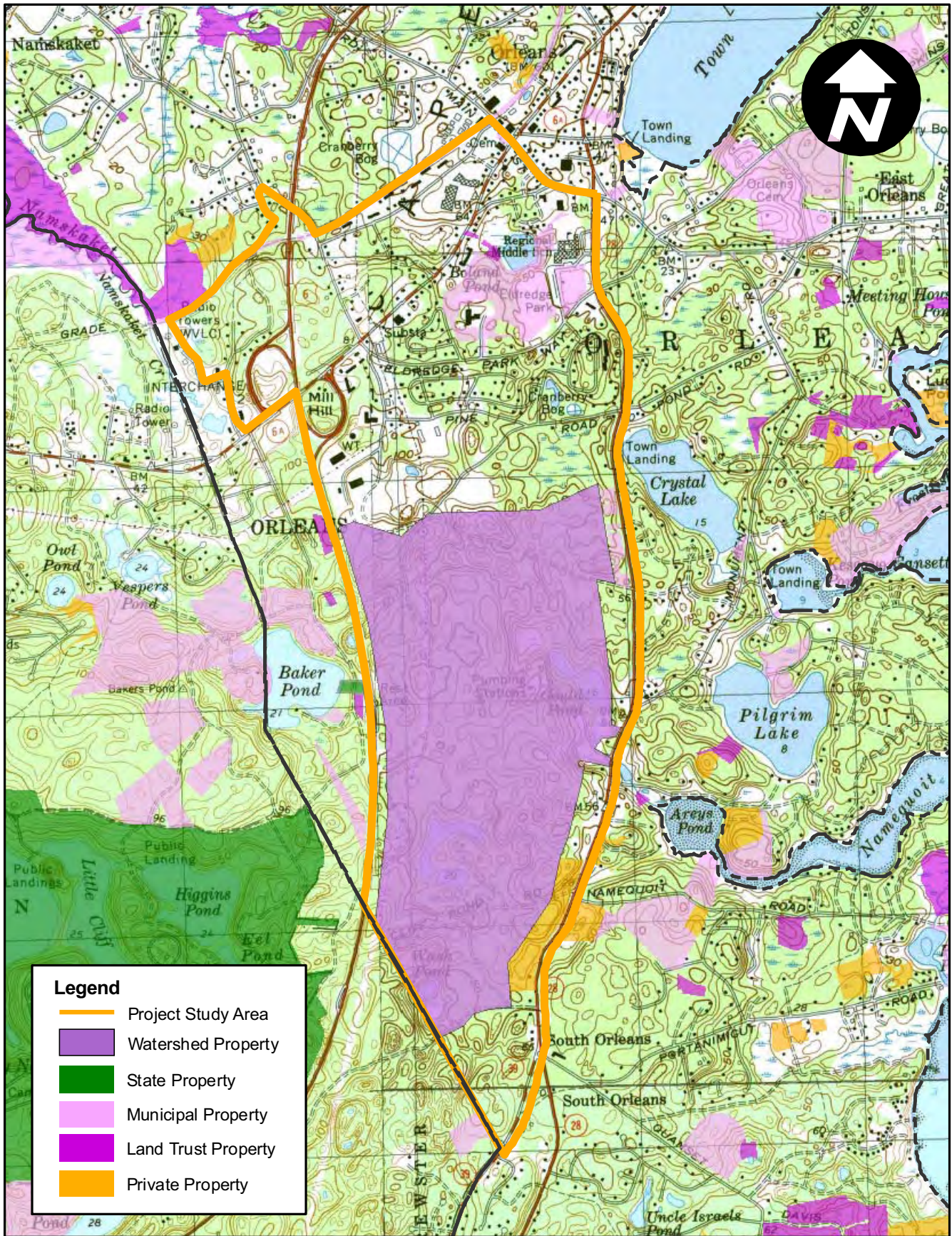
Figure 19: Arey's Pond

There are a number of protected and recreational open space properties located in close proximity to the study area. While no improvements are proposed at these particular properties, the construction of a trail will still provide an alternative means of travel for those wishing to visit these areas. The proximity of these open space parcels relative to the study area is shown in Figure 17.

The following open space properties are accessible from the local roadways in the study area:

Namequoit Road:

- Seikel Property (Orleans Conservation Trust)
- John Kenrick Woods Conservation Area (Town of Orleans and Orleans Conservation Trust) (Figure 18)



Orleans USGS Quad

0 1,000 2,000 Feet
Scale:

Figure 17: Protected and Recreational Open Space
 South Orleans to Orleans Trail Study
 Intersection of Routes 28/39 to Main Street
 Orleans, Massachusetts

❖ Existing Conditions

Arey's Lane:

- Arey's Pond (Figure 19)
- Welch Property (Orleans Conservation Trust)
- Peck Land (Town of Orleans and Orleans Conservation Trust)

Monument Road:

- Pilgrim Lake
- Dickinson Conservation & Recreation Area (Town of Orleans)

Route 28:

- Eldredge Park (Town of Orleans) (Figure 20)
- Crystal Lake

West Road:

- Cape Cod Rail Trail (Massachusetts Department of Conservation & Recreation)



Figure 20: Eldredge Park



Figure 21: South Orleans District School Marker

2.3 Cultural Resources

Identifying cultural resources early in the project development process is important because it allows the Town and project proponents to:

Address community and preservation concerns early in the project planning process
Ensure that the project proceeds without causing harm to these important resources

The Massachusetts Cultural Resource Information System (MACRIS) was reviewed to identify known historic and cultural resources within the study area. MACRIS data includes but is not limited to, the Inventory of Historic Assets of the Commonwealth, National Register of Historic Places nominations, State Register of Historic Places listings, and local historic district study reports. None of the properties identified below are currently listed in the National Register of Historic Places according to the National Register Information System maintained by the National Park Service.



Figure 22: Frank Gould House

Table 2 documents sites within the study area. The sites are listed in the order in which are they located from south to north.

Table 2: Historic Resources Within Study Area

MHC Inventory No.	Property Name	Address	Year Built / Established
ORL.E	Old King's Highway Regional Historic District		1973
ORL.916	South Orleans District School Marker	South Orleans Road	1856-1893
ORL.371	Seneca Higgins House	4 Eli Rodgers Road	1800
ORL.370	Capt. Jonathan Kendrick House	388 South Orleans Road	1792
ORL.355	Capt. John Kenrick – Arthur Sparrow House	353 South Orleans Road	1800
ORL.354	Capt. Seth Sparrow House	341 South Orleans Road	1850
ORL.369	H.F. Sparrow House	332 South Orleans Road	1850
ORL.353	John Murdock House	317A South Orleans Road	1815
ORL.352	Linnell Isaiah Gould, J. House	313 South Orleans Road	1825
ORL.350	A. Smith House	310 South Orleans Road	1830
ORL. 368	J. Atkins, J. - Small, Frank G. House	309 South Orleans Road	1850
ORL.366	E.C. Nickerson House	286 South Orleans Road	1875
ORL.365	Orleans Episcopal Church of the Holy Spirit	Monument Road	1933
ORL.349	Frank Gould House	268 South Orleans Road	1790
ORL.143	Alexander Mayo House	128 South Orleans Road	1850
ORL.142	Christopher Edwards House	109 South Orleans Road	1875
ORL.141	Augusta E. Fiske House	69 South Orleans Road	1893
ORL.201	Sylvanus Collins House	67 South Orleans Road	1895
ORL.92	Capt. Thomas Snow Newcomb	South Orleans Road	1850
ORL.917	Pleasant Bay Marker	South Orleans Road	1976
ORL.78	M. Long House	12 West Road	1795
ORL.77	Orleans Jail	24 West Road	1770
ORL.76	Nathaniel Gould House	36 West Road	1830

Source: Massachusetts Cultural Resource Information System (MACRIS) Database, January 2009.

The Old King's Highway Regional Historic District is bounded roughly by the Mid Cape Highway (Route 6) and Cape Cod Bay and includes parts of Sandwich, Barnstable, Yarmouth, Dennis, Brewster and Orleans. Route 6A, known as the Old King's Highway, forms the spine of this historic district as it winds past hundreds of historic structures and natural settings that shaped this region's development. Figure 23 graphically shows this historic district's location relative to the study area.

The majority of the other historic properties listed in Table 2 are residential structures that line the local roadways within the study area. It is unlikely that any historic properties will be affected by the project given the nature of the proposed work. However, appropriate avoidance or mitigation measures would be implemented, if warranted.

Should the project advance to the design phase using state/federal funding, and have the potential to impact cultural or historic resources, a full review will need to be conducted in compliance with the regulations governing Massachusetts General Laws Chapter 9, sections 26-27C (as amended by Chapter 152 of the Acts of 1982 and Chapter 254 of the Acts of 1985) and Section 106 of the National Historic Preservation Act of 1966 as amended (36 CFR 800). This review will also require further coordination with the Wampanoag Tribal Historic Preservation Officer (THPO) and the Massachusetts Historical Commission to determine if any archaeological sites are within the footprint of the proposed work.

2.4 Land Use

Understanding the existing land use is important for selecting an alternative that is compatible with the various residential, commercial/industrial and natural areas within the study area. Existing land use can also present potential constraints to the project.

2.4.1 Adjacent Land Use

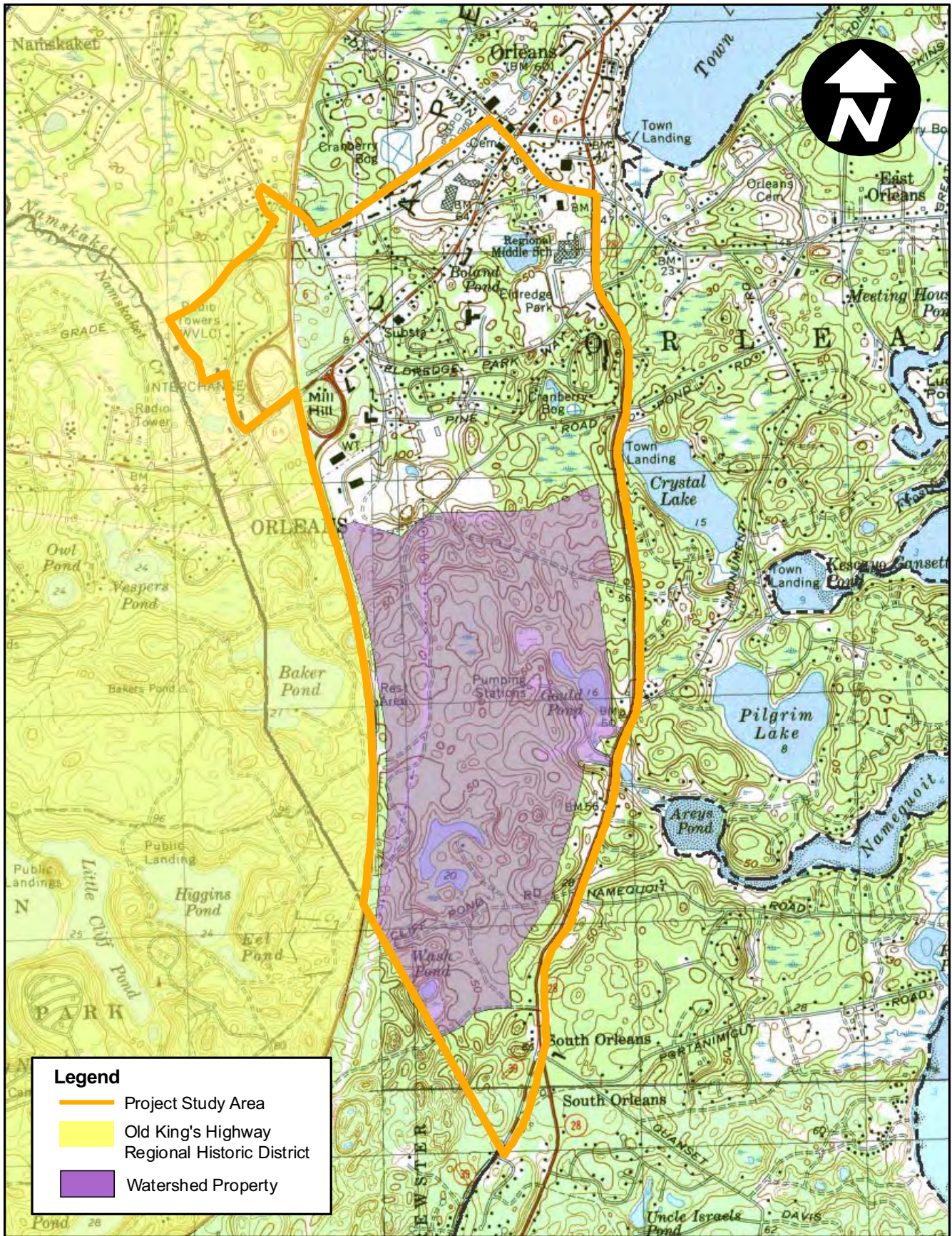
The project study area is comprised of a mix of residential, open space, municipal, and industrial land use.

In South Orleans, near the intersection of Routes 28 and 39, there is a small commercial cluster with a gas station and convenience store. From this area north, the study area is bounded on the west by Route 6 and on the east by the Route 28 corridor. The 500-acre undeveloped watershed parcel encompasses the majority of the land area in between these two roadways. The watershed property is further discussed in Section 2.1.5. Along the Route 28 corridor, there is a mix of residential, undeveloped, and open space parcels.

North of the watershed property, there is a high concentration of industrial uses along Giddiah Hill Road, O'Connor Way, Lots Hollow Road and Finlay Road. The Charles Moore Arena Ice Skating Rink and Town landfill / transfer station are also located in this area.

Continuing north, the section of study area between Finlay Road and Eldredge Park Way consists of residential neighborhoods.

Between Eldredge Park Way and Main Street, the project study area is made up of Town owned properties including Eldredge Park, Nauset Regional Middle School, Orleans Elementary School, and Snow Library.



Orleans USGS Quad

0 1,000 2,000 Feet
Scale:

Figure 23: Local Historic Districts
South Orleans to Orleans Trail Study
Intersection of Routes 28/39 to Main Street
Orleans, Massachusetts

2.4.2 Contamination Issues

The purpose of this section is to identify potential contamination issues along or in close proximity to the alternative alignments under consideration within the study area. Contamination is typically associated with the use histories of adjacent properties. Such histories could include improper disposal actions or a release of oil or hazardous material. It should be noted that the trail construction would not introduce any hazardous waste or contaminated materials to the project area.

A preliminary hazardous waste and contaminated materials screening was conducted for the study area. The preliminary screening is a general review to identify properties in close proximity to the alternatives that could either contain or be a source of hazardous waste or contaminated materials. The screening was limited to publicly available information from the following searchable databases:

Massachusetts Department of Environmental Protection (MA DEP) Bureau of Waste Site Cleanup (BWSC) database for sites where a release of oil or hazardous material (OHM) has been reported to MA DEP. At the time the search was run, the MA DEP maintained site/reportable release database was current as of January 13, 2009.

Comprehensive Environmental Compensation Liability Act (CERCLA) List (Federal Superfund Site List) for sites. The EPA's Superfund Query Form was used to retrieve data from the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database.

MA DEP Solid Waste Facility (landfills, transfer stations, and combustion facilities) datalayer obtainable from MassGIS.

Sites within the study area were reviewed and documented as part of this screening. Each site was evaluated for potential project impact based on the information provided in the databases including use histories, the type of site and proximity to the project. This screening aims to evaluate more general issues within the study area and does not involve details on any one property. Sites of known contamination are a greater concern than sites with potential contamination.

Table 3 and the accompanying text present sites of concern identified during the preliminary screening. The sites are listed, in general, from south to north as follows:

Table 3: Preliminary Screening Results

Site Name	Address	Site Status	Phase / Class	Release Tracking #
Route 28	401 South Orleans Road	RAO	III / A2	4-0018969
Residential	256 South Orleans Road	RAO	A2	4-0018720
Nauset Middle School	Route 28	RAO	A1	4-0012781 4-0012791
No Location Aid	26 Giddiah Hill Road	RAO	III / A3	4-0012613
Orleans Sanitary Landfill	End of Lots Hollow Road	ADEQUATE REG		4-0000137
Nynex	28 Lots Hollow Road	RAO`	A2	4-0013593 4-0012478 4-0000774
Chas Moore Arena, Inc.	Off O'Connor Way	RAO	A2	4-0011785

Source: MA DEP Bureau of Waste Site Cleanup Searchable Sites Database, January 13, 2009.

Route 28: The Hess facility is located at 401 South Orleans Road, across from Eli Rodgers Road. The site is currently classified as a RAO status, Phase III Class A2 site. This status means that a Response Action Outcome Statement (RAO) was submitted. A RAO Statement asserts that the response actions were sufficient to achieve a level of “no significant risk” or at least ensure that all substantial hazards have been eliminated. Phase III indicates that cleanup options have been assessed and a cleanup plan selected. A Class A RAO means that a permanent solution has been achieved with Class A1, A2, and A3 indicating the subsequent level of contamination. A Class A2 RAO indicates that contamination levels are above background but below cleanup standards.

256 South Orleans Road: Based on the Town GIS, this residence is located on the west side of Route 28, just north of the Monument Avenue intersection. According to the MA DEP’s database, the site status is listed as Class A2 RAO. This status means that a Response Action Outcome Statement (RAO) was submitted. A RAO Statement asserts that the response actions were sufficient to achieve a level of “no significant risk” or at least ensure that all substantial hazards have been eliminated. A Class A2 RAO indicates that contamination levels are above background but below cleanup standards.

Nauset Middle School: The Nauset Middle School is located along the west side of Route 28, between Eldredge Park Way and Main Street. The site is currently classified as a RAO status, Class A1 site. Class A1 RAO indicates that remedial actions have reduced contamination levels to background. At this level of remaining contaminant concentrations, this site is not expected to affect the corridor.

26 Giddiah Hill Road: Based on the Town GIS, this site is located on the west side of Giddiah Hill Road at the intersection with Industry Way. The site is currently classified as a RAO status, Phase III Class A3 site. This status means that a Response Action Outcome Statement (RAO) was submitted. A RAO Statement

asserts that the response actions were sufficient to achieve a level of “no significant risk” or at least ensure that all substantial hazards have been eliminated. Phase III indicates that cleanup options have been assessed and a cleanup plan selected. An A3 Class indicates that a permanent solution has been achieved, but contamination has not been reduced to background. Further, an Activity and use Limitation (AUL) has been implemented to limit future exposure to contaminants remaining at the site.

Orleans Sanitary Landfill: The Town landfill, which is now operating as a transfer station, is located at the end of Lots Hollow Road and shown in Figure 24. According to MA DEP’s database, the site has been adequately regulated by another government agency since 1995. The landfill is a Superfund site based on the CERCLIS database. The Superfund program is administered by the U.S. Environmental Protection Agency (EPA). The site is not currently listed on the National Priority List (NPL).



Figure 24: Orleans Transfer Station²⁴

Nynex: This site is listed at 28 Lots Hollow Road. Based on the Town GIS data, this parcel is located across from Finlay Road. The site status is listed as Class A2 RAO according to MA DEP’s database. This status means that a Response Action Outcome Statement (RAO) was submitted. A RAO Statement asserts that the response actions were sufficient to achieve a level of “no significant risk” or at least ensure that all substantial hazards have been eliminated. A Class A2 RAO indicates that contamination levels are above background but below cleanup standards.

Chas Moore Arena, Inc.: The arena is located near the end of O’Connor Way. The site is currently classified as a RAO status, Class A2 site. This status means that a Response Action Outcome Statement (RAO) was submitted. A RAO Statement asserts that the response actions were sufficient to achieve a level of “no significant risk” or at least ensure that all substantial hazards have been eliminated. A Class A2 RAO indicates that contamination levels are above background but below cleanup standards.

As discussed above, the preliminary screening revealed a handful of current or past environmental contamination issues associated with sites within the study area.

Once a recommended alternative is selected for implementation, these sites should be cross-referenced against the alignment. The files on each site impacted by the trail design should be reviewed at MA DEP’s offices. Pending the outcome of this review, a more detailed investigation may be needed during the preliminary design phases and/or necessary environmental precautions required during reconstruction activities depending upon the type of work and extent of excavation proposed along the trail.

2.5 Local Roadways

An accident study of the local roadways within the study area was conducted to aid in evaluating each possible alternative for connecting South Orleans to Orleans Town Center and to the Cape Cod Bike Trail. Accident information was supplied by the Orleans Police Department for the dates January 1, 2005 thru November 19, 2008. The areas of study were:

- Route 28 from Route 39 to Main Street
- Finlay Road from Lots Hollow Road to Route 28
- Eldredge Park Way from Route 6A to Route 28

Route 28 is a state road that runs from Route 39 and Chatham to Route 6A. Route 28 or South Orleans Road is lined with a thick growth of trees. There are a number of minor roads that intersect Route 28. The Route 28 area had a total of 44 accidents including 2 pedestrian collisions, 6 bicyclist collisions, and 1 fatality during the 3 ½ year period. The fatality occurred on a link between intersections on Route 28 where there were no sidewalks. The highest accident-prone intersections are where South Orleans Road meets Harwich Road (Route 39) with 8 collisions, Namequoit Road with 4 collisions, and Quanset Road with 4 collisions over this 3 ½ year period.

Finlay Road connects between Lots Hollow Road and Route 28 on the eastside of Route 28, and then the road becomes Pond Road. This intersection is one of the primary access points to the industrial district with a tractor-trailers entering and exiting the area. The Finlay Road area had 11 accidents with no pedestrian/bicyclist collisions. In addition, there were 11 accidents at the intersection of Finlay Road and Route 28 over the 3 ½ year period. Within the last year, this intersection has been improved to include exclusive turn lanes, enhanced geometry, and upgraded alignment.

The Eldredge Park Way area is a stretch of road connecting Route 6A to Route 28. The road then becomes Tonset Road on the eastside of Route 28. Eldredge Park Way is lined with trees on both sides of the road. It has very minor roads with a school entrance and fire station on the north side of the road. Eldredge Park Way had 11 accidents with no pedestrian/bicyclist collisions. In addition to those accidents, 6 occurred at the intersection of Eldredge Park Way and Route 28.

The number of accidents at each intersection over the 2 ½ year time period is listed in Table 4. Only those intersections with accidents during this time period are listed in the table. This summary will be helpful when assessing the various alternatives under study so that a recommended alignment is not designed through a high accident area.

Table 4: Accident Summary (2006 – Present)

Finlay Road	Key Intersecting Streets									
	Giddiah Hill Road		Nickerson Road			Kettle Pond Road		Route 28		
	6		0			0		8		
Rte 28	Academy Place	Daley's Terrace	Harwich Road	Main Street	Monument Road	Morgan's Way	Namequoit Road	Pond Road	Quanset Road	
	1	1	8	7	1	1	4	3	4	
Lots Hollow Road	O' Connor Way			Finlay Road			Eldredge Park Way			
	0			4			3			
Eldredge Park Way	Route 6A		Route 28			Marston's Way		West Road		
	7		6			1		0		

Since the time the accident data provided in Table 4 was summarized, a number of on-going roadway/intersection project or recently completed upgrades to the study area have been completed. They are as follows:

The upgrade & geometric alignment of the Route 28 (S. Orleans Road)/Finlay Road/Pond Road intersection. Improvements included an exclusive left-turn lane on Route 28 northbound to Finlay Road, re-aligning Finlay to intersect directly opposite Pond Road, addition of another lane on Finlay Road and geometric modifications to the intersection to better accommodate turning truck traffic. This improvement is expected to be completed in Summer 2009.

The minor widening and resurfacing to West Road from Skaket Corners Plaza to Skaket Beach Road. This project includes new drainage improvements and minor widening. This improvement is expected to be completed in Summer 2009.

The Lots Hollow Road relocation project was completed in Summer 2007. This project included terminating the intersection of Lots Hollow/Eldredge Park Way & relocating it 350 feet to the east. In addition geometric improvements were implemented at Lots Hollow/Finlay Road to include enhanced corner radii to accommodate truck traffic, granite curbing and an additional lane on the Lots Hollow approach to the Eldredge Park Way intersection.

These roadway and intersection improvements will mitigate some of the accident-prone locations and provide a safer environment for motorists, bicyclists and pedestrians.