

INLET SUMMARY SHEET

INLET: Providence Harbor (#31)

DATE AND TIME SURVEYED AND TIDE STAGE: 20 March 1999, 12:30-13:45. High at 09:49 (+5.2), Low at 15:11 (-1.0), at Providence State Pier #1 Station #1177.

INLET CLASS: A

GEOMORPHOLOGY: Large natural channel intensely modified to create major harbor.

PRINCIPAL RESOURCES AT RISK: The shoreline that encompasses Providence Harbor is highly modified with seawalls, port/harbor facilities, and reclamation areas. Despite these modifications, the industrial development and the shipping traffic, the area does have considerable natural resources. Marshes are associated with the ponds (notably on the east side) in the vicinity of the harbor area. Numerous birds, including waterfowl (black ducks, gadwalls, widgeons, puddle ducks, mergansers, scaups, canvasbacks), raptors (osprey notably at Bucklin Point), and gulls utilize the area, especially the ponds. Seals are present. There is a large fish diversity in this area, including winter flounder, blue fish, american and hickory shad, weakfish, atlantic salmon (Seenok River), white perch and alewife. Oysters are present. The pond on the SE side of the harbor is part of the Squantum Woods State Park. Providence Harbor is a very important commercial harbor with an estimated four billion gallons of oil (mostly gasoline, diesel, kerosene, No. 4, and No. 6 fuel oils) being transported through the harbor every year. Furthermore, a large number of cargo ships and barges also pass through the harbor. Commercial and industrial structures, including oil storage tanks, are located in the harbor.

PRELIMINARY PROTECTION STRATEGY: Both flood- and ebb-tide protection strategies are prepared for Providence Harbor.

Flood tide: CP-1, CP-3, CP-4, CP-5, and CP-6 are shore-based Collection Points. CP-2 is an open water skimmer, deployed in the middle of the channel. An additional skimmer can be deployed at the southern entrance of the harbor to collect incoming oil. CP-1, CP-3, and CP-4 are located on the western side, and CP-5 and CP-6 are located on the eastern side. Protection boom is deployed across the entrance to Watchemoket Pond and the pond north of Squantum Point.

From an anchor point NW of Pomham Rocks, deploy deflection boom in a northerly direction to the seawall at the SW corner (CP-6) of the reclaimed area (Mobil Oil off loading facility). From an anchor point on the seawall at the NW corner of the reclaimed area (Mobil Oil off-loading facility), deploy protection boom in a NNW direction to a primary anchor point at the point just south of the opening to the pond north of Squantum Point. From this point, deploy deflection boom in a NW direction

to a skimmer (CP-2) positioned in the middle of the channel SW of Kettle Point. From an anchor point in the western part of the channel, east of Fields Point, deploy deflection boom in a Christmas tree configuration to the skimmer at CP-2 (NNW direction), and in a NW direction to the seawall on the west bank (CP-1) near the Petrolane, Inc. facility.

From an anchor point in the western part of the channel, west of Kettle Point, deploy deflection boom in a NW direction to the seawall (CP-3) just south of City Pier at the Bishop Terminal facility. From an anchor point in the channel east of City Pier, deploy deflection boom in a Christmas tree configuration in a NW direction to the seawall in front of the four silos (CP-4) at the Hudson Asphalt facility, and in a NNE direction to the SW corner of the riprap/seawall (CP-5) of the reclaimed area south of the Wilkes Barre Pier.

Collection Point	Description	Access	Proposed Equipment
	Protection boom at entrance of ponds	Deploy from old train track, foot/bicycle path on east side of harbor.	Approx. 900 ft. protection boom, 9 sets of anchors.
	Skimmer in southern part of harbor	Deploy skimmer from one of various access points in Providence Harbor.	Skimmer.
CP-1	Seawall	From Allen Ave. in Providence, turn east on Ernest St. and continue to access point (Petrolane facility).	Approx. 1,300 ft. deflection boom, 13 sets of anchors, skimmer.
CP-2	Skimmer	Deploy skimmer from one of various access points in Providence Harbor.	Approx. 3,300 ft. deflection boom, 3,000 ft. of protection boom, 63 sets of anchors, skimmer.
CP-3	Seawall	From Allen Ave. in Providence, turn east on Ernest St. and continue to access point (Hudson Asphalt facility) near City Pier.	Approx. 900 ft. deflection boom, 9 sets of anchors.

Collection Point	Description	Access	Proposed Equipment
CP-4	Seawall	From Allen Ave. in Providence, turn east on Ernest St. and continue to access point (Hudson Asphalt facility).	Approx. 1,400 ft. deflection boom, 14 sets of anchors.
CP-5	Riprap/seawall	From Veterans Memorial Pkwy. in East Providence, turn west towards Wilkes Barre Pier and continue south to access point.	Approx. 4,000 ft. deflection boom, 40 sets of anchors.
CP-6	Seawall	From Pawtucket Ave., turn west to access the terminal (Mobil Oil) at the reclaimed land area.	Approx. 1,000 ft. deflection boom, 10 sets of anchors.

RESOURCES REQUIRED (if full strategy for flood-tide is implemented): Approximately 11,900 ft. of deflection boom; 3,900 ft. protection boom; 158 anchor sets minimum. Two JBF 420 Skimmer Systems with skimming capacity of 225 bbl/hr, and onboard storage capacity of 1,320 gals. Vacuum trucks (2,000-5,000 gal. capacity) with skimmer heads, additional storage capacity, and other equipment as needed.

Ebb tide: CP-1, CP-3, CP-4, CP-5, and CP-6 are shore-based Collection Points. CP-2 is an open water skimmer, deployed in the middle of the channel. An additional skimmer can be deployed at the northern entrance of the harbor to collect incoming oil. CP-1, CP-3, and CP-4 are located on the western side, and CP-5 and CP-6 are located on the eastern side. Protection boom is deployed on the west side across the entrance to Watchemoket Pond and the pond north of Squantum Point.

From an anchor point in the channel west of reclaimed area south of the Wilkes Barre Pier, deploy deflection boom in a Christmas tree configuration in a SE direction to the SW corner of the riprap/seawall (CP-5) of the reclaimed area south of the Wilkes Barre Pier, and in a SSW direction to the seawall in front of the four silos (CP-4) at the Hudson Asphalt facility.

From an anchor point in the western part of the channel, east of City Pier, deploy deflection boom in a SSW direction to the seawall (CP-3) just south of City Pier at the Bishop Terminal facility.

From an anchor point in the middle of the channel SW of Kettle Point, deploy deflection boom in a SW direction to the seawall on the west bank (CP-1) near the Petrolane, Inc. facility, and in a SSE direction to a skimmer (CP-2) positioned in the middle of the channel west of Squantum Point. From an anchor point at the point just south of the opening to the pond north of Squantum Point, deploy deflection boom in a SSW direction to the skimmer at CP-2. From the anchor point at the point just south of the opening to the pond north of Squantum Point, deploy protection boom in a southerly direction to the NW corner of the reclaimed area (Mobil Oil off-loading facility). From an anchor point in the channel west of the reclaimed area (Mobil Oil off-loading facility),

deploy deflection boom in a SE direction to the seawall at the SW corner (CP-6) of the reclaimed area (Mobil Oil off-loading facility).

Collection Point	Description	Access	Proposed Equipment
	Protection boom at entrance of ponds	Deploy from old train track, foot/bicycle path on east side of harbor.	Approx. 900 ft. protection boom, 9 sets of anchors.
	Skimmer in northern part of harbor	Deploy skimmer from one of various access points in Providence Harbor.	Skimmer.
CP-1	Seawall	From Allen Ave. in Providence, turn East on Ernest St. and continue to access point (Petrolane facility).	Approx. 1,000 ft. deflection boom, 10 sets of anchors, skimmer.
CP-2	Skimmer	Deploy skimmer from one of various access points in Providence Harbor.	Approx. 4,400 ft. deflection boom, 44 sets of anchors, skimmer.
CP-3	Seawall	From Allen Ave. in Providence, turn east on Ernest St. and continue to access point (Bishop Terminal facility) near City Pier.	Approx. 1,000 ft. deflection boom, 10 sets of anchors.
CP-4	Seawall	From Allen Ave. in Providence, turn east on Ernest St, and continue to access point (Hudson Asphalt facility).	Approx. 3,600 ft. deflection boom, 36 sets of anchors.
CP-5	Riprap/seawall	From Veterans Memorial Pkwy. in East Providence, turn west towards Wilkes Barre Pier, and continue south to access point.	Approx. 1,000 ft. deflection boom, 10 sets of anchors.

Collection Point	Description	Access	Proposed Equipment
CP-6	Seawall	From Pawtucket Ave., turn west to access the terminal (Mobil Oil) at the reclaimed land area.	Approx. 1,000 ft. deflection boom, 3,000 ft. protection boom, 40 anchor sets.

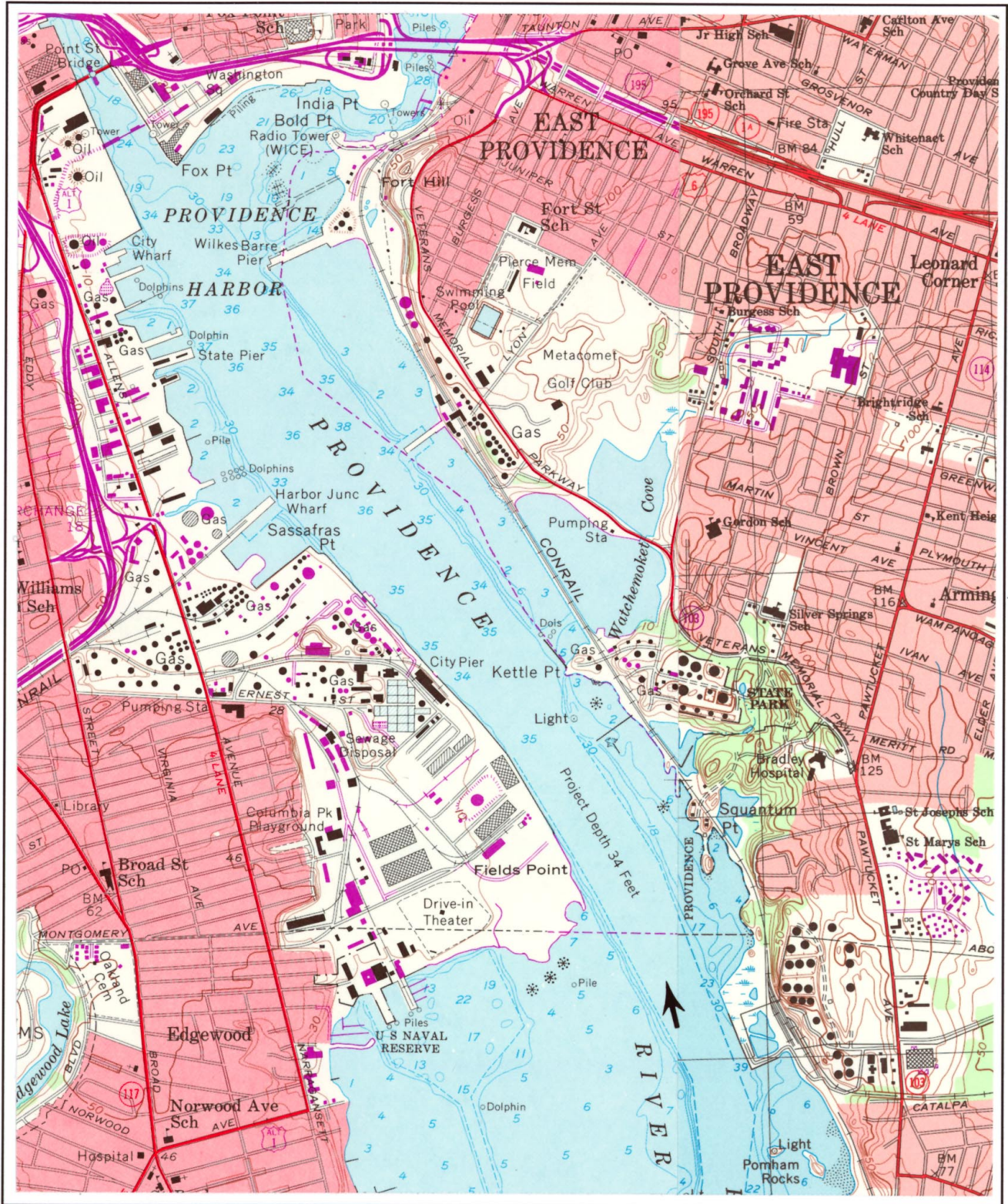
RESOURCES REQUIRED (if full strategy for ebb-tide is implemented): Approximately 12,000 ft. of deflection boom; 3,900 ft. protection boom; 159 anchor sets minimum. Two JBF 420 Skimmer Systems with skimming capacity of 225 bbl/hr, and onboard storage capacity of 1,320 gals. Vacuum trucks (2,000-5,000 gal. capacity) with skimmer heads, additional storage capacity, and other equipment as needed.

CONTACT INFORMATION:

Rhode Island Dept. of Env. Mgmt. Emergency Response:	(401) 222-3070
U.S. Fish and Wildlife:	(401) 364-9124
U.S. Coast Guard:	(401) 435-2300
Coastal Resources Management Council:	(401) 783-3370
Cranston EMA Director:	(401) 461-4161
Providence EMA Director:	(401) 272-3121
East Providence EMA Director:	(401) 435-7677

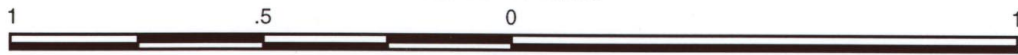
OTHER COMMENTS:

31 - PROVIDENCE HARBOR

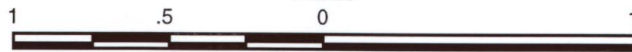


From USGS 7.5' topographic quads: Providence, RI published: 1957, photorevised 1970 and 1975; East Providence, RI-Mass published: 1971, photorevised 1979

SCALE 1 : 24,000



MILES



KILOMETERS

222



INLET SKETCH MAP

Inlet Name PROVIDENCE HARBOR

Inlet Number 31

Recorder(s) MOH/LC

Date/Time 20 MARCH 1999; 1345

Tide Stage EBB








Inlet Classification A






CHECKLIST

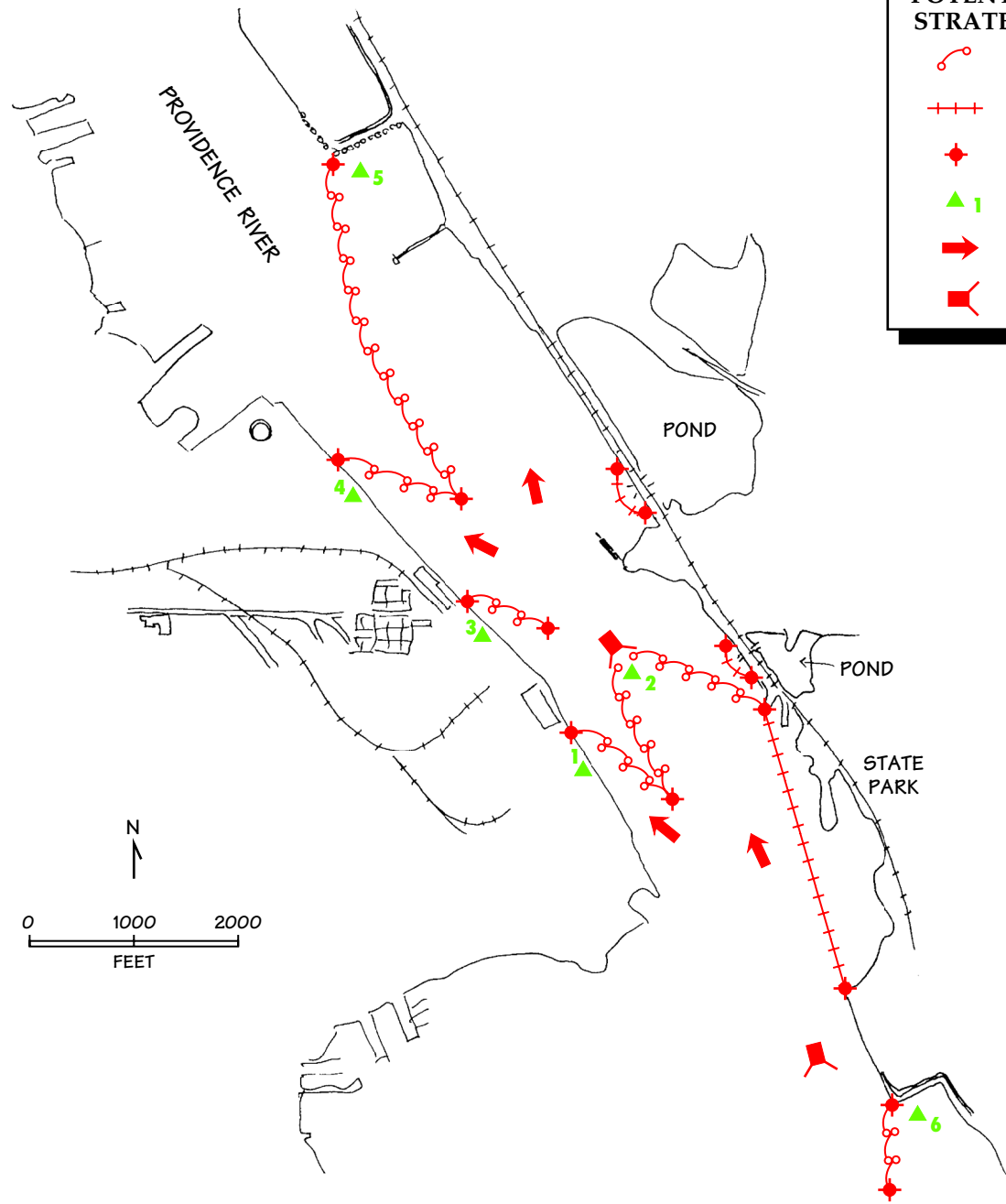
- North Arrow
- Scale
- Substrate Type

223

LEGEND

-  Red Channel Marker Buoy
-  Green Channel Marker Buoy
-  Marsh
-  Riprap
-  Sand
-  Sand & Gravel
-  Gravel

POTENTIAL PROTECTION STRATEGY (FLOOD TIDE)	
	Deflection Boom
	Protection Boom
	Anchor Point
	Collection Point
	Path of Oil
	Skimmer



INLET SKETCH MAP

Inlet Name PROVIDENCE HARBOR

Inlet Number 31

Recorder(s) MOH/LC

Date/Time 20 MARCH 1999; 1345

Tide Stage EBB








Inlet Classification A

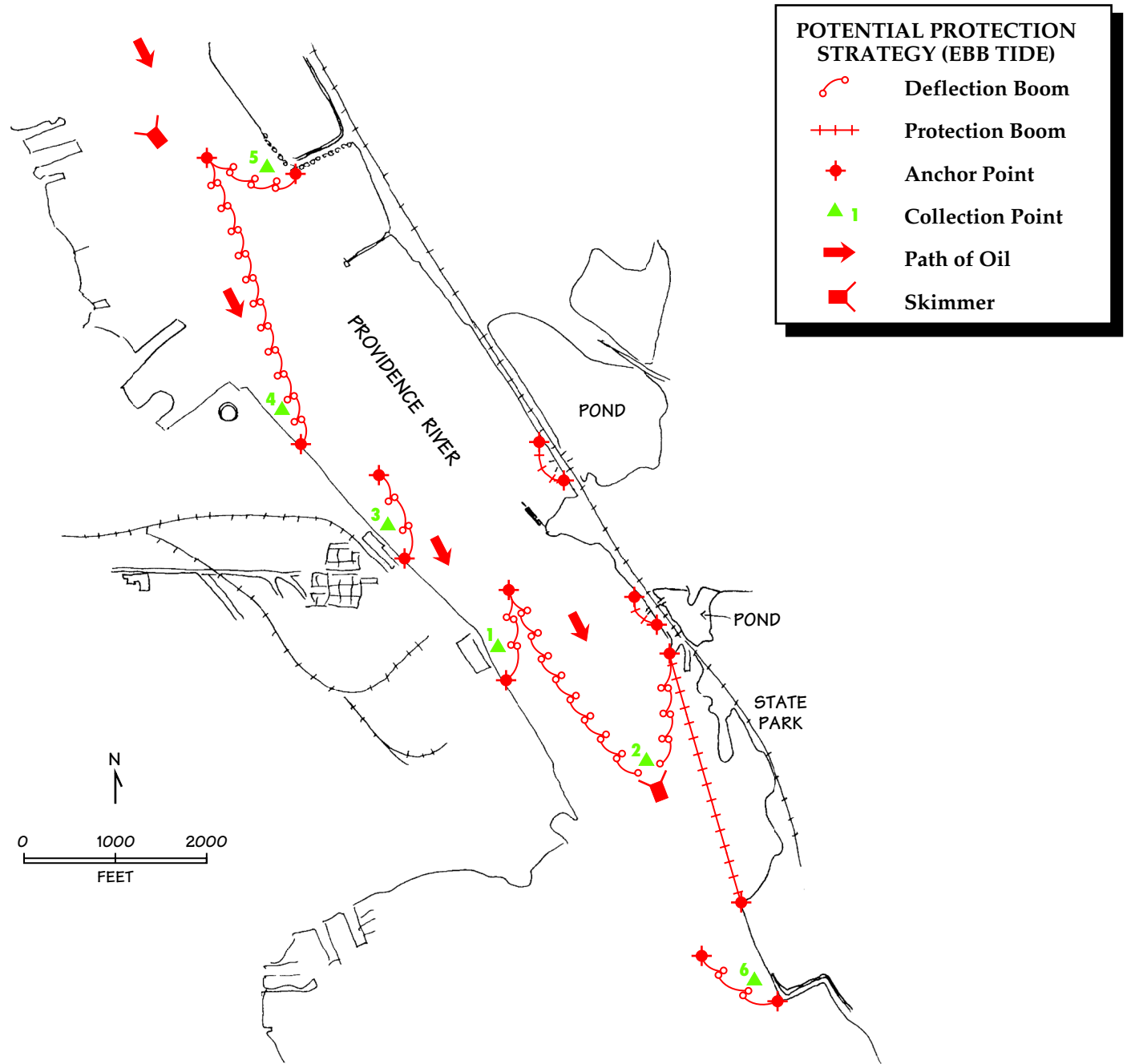
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224

LEGEND

-  Red Channel Marker Buoy
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-  Marsh
-  Riprap
-  Sand
-  Sand & Gravel
-  Gravel



POTENTIAL PROTECTION STRATEGY (EBB TIDE)

-  Deflection Boom
-  Protection Boom
-  Anchor Point
-  Collection Point
-  Path of Oil
-  Skimmer

31 - PROVIDENCE HARBOR



From USGS NAPP: roll #8355, frame #208; March 1995; scale -1:40,000
225

0 1 2 MILES



Looking NWW across Providence River at low tide on 17 March 1999, Providence Harbor (#31).



Looking NNE up Providence River at low tide on 17 March 1999, Providence Harbor (#31).