NEW JERSEY DIVISION OF
Fish and Wildlife

U.S.
FISH & WILDLIFE
SERVICE
DEPARTMENT OF THE INTERIOR

Pond Creek Salt Marsh Restoration Project

"Restoring a Native Salt Marsh"

US Army Corps
of Engineers
Philadelphia District

Cape May County Department
of Mosquito Control

Project Partners

- U.S. Army Corps of Engineers
- New Jersey Department of Environmental Protection
- U.S. Fish and Wildlife Service
- Cape May County Department of Mosquito Control

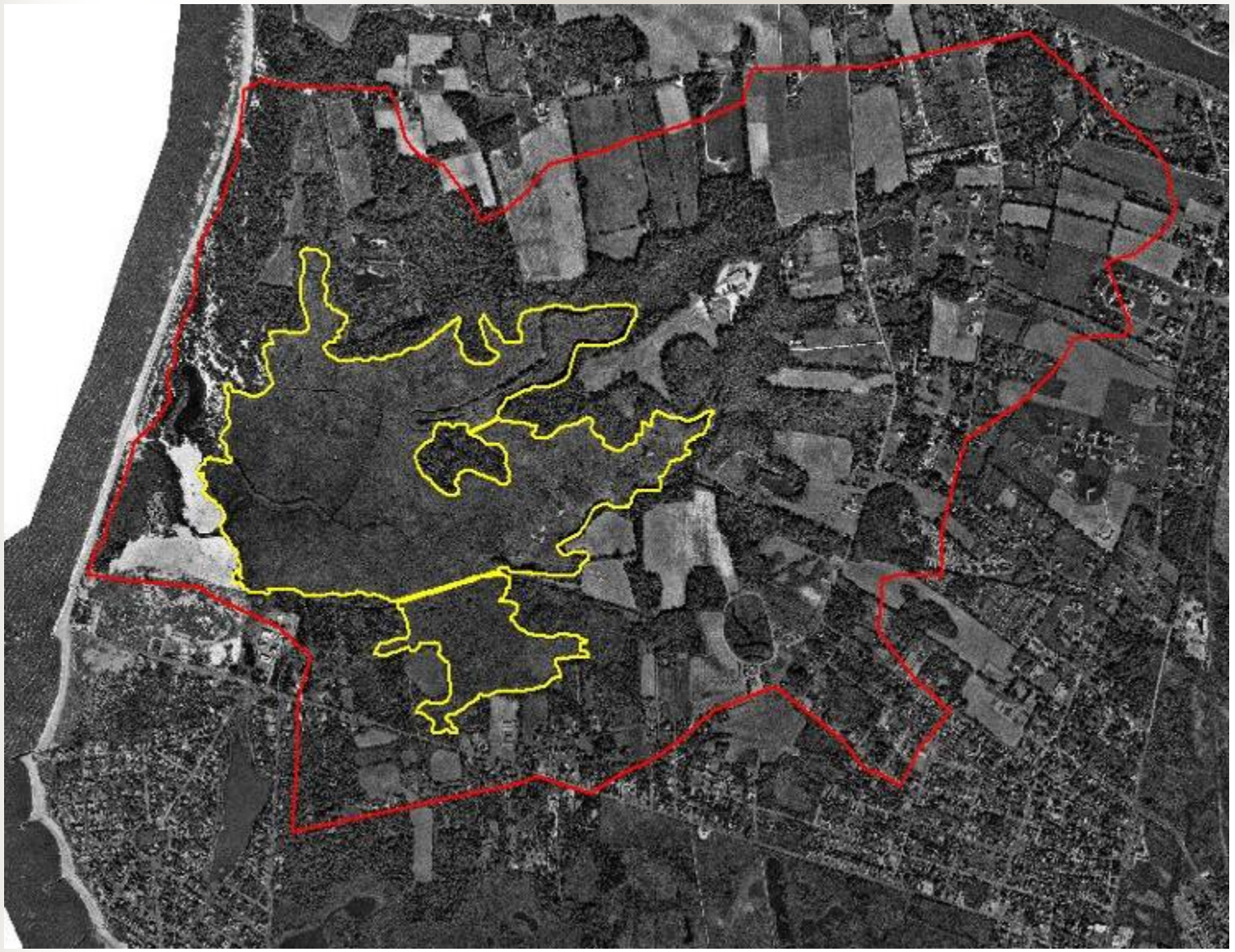
Project Goal

- **To restore Pond Creek to an estuarine intertidal emergent marsh, dominated by native species such as saltmeadow cordgrass (*Spartina*).**

Pond Creek

- **Specifications:**
  - **Approx. 400 acres (entire marsh)**
  - **Part of Higbee Beach State Wildlife Management Area**
  - **Located along Delaware Bay in Lower Township, Cape May County**

Project Area Map



Pond Creek watershed and marsh limits

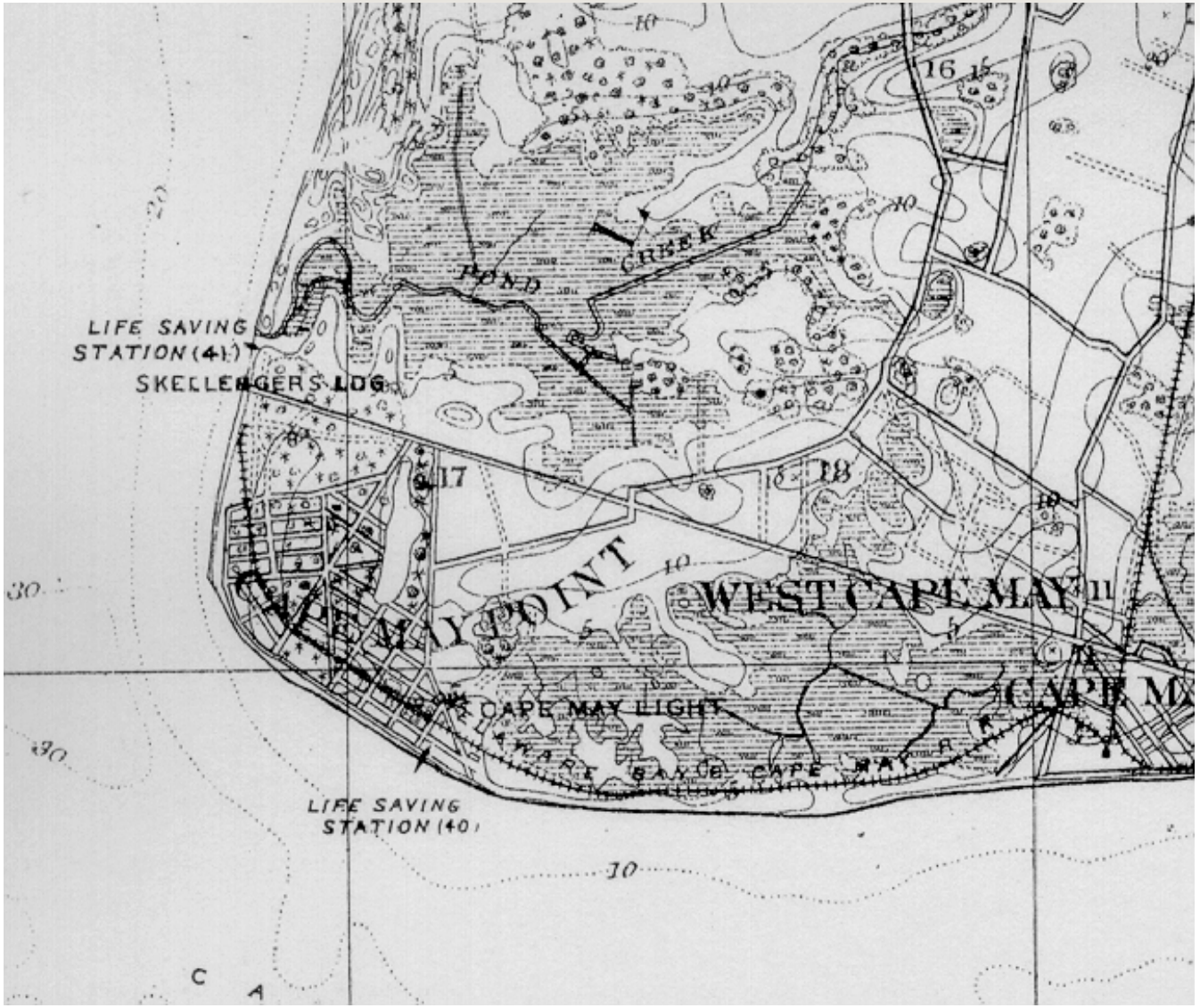
Pond Creek – September 2005

Pond Creek

- **Pond Creek is currently managed for:**
  - **Migratory birds**
  - **Waterfowl**
  - **Human recreation (e.g., birding and recreation)**
  - **Marsh is dominated by common reed (*Phragmites australis*)**

Pond Creek

- **History:**
  - **Prior to 1917, Pond Creek was a free flowing tidal creek.**
  - **Tide gate was installed in 1917.**
  - **Harbison-Walker Magnesite Plant operated on 126-acres of the site from 1941-1983.**
  - **Flood control structure (discharge pipe culvert, outfall box, tidal flap gate, levee) was completed in the 1960s.**
  - **Flood control structure and levee washed-out in 1996 during Hurricane Fran.**



1888 Map of Pond Creek

Pond Creek - Alternatives

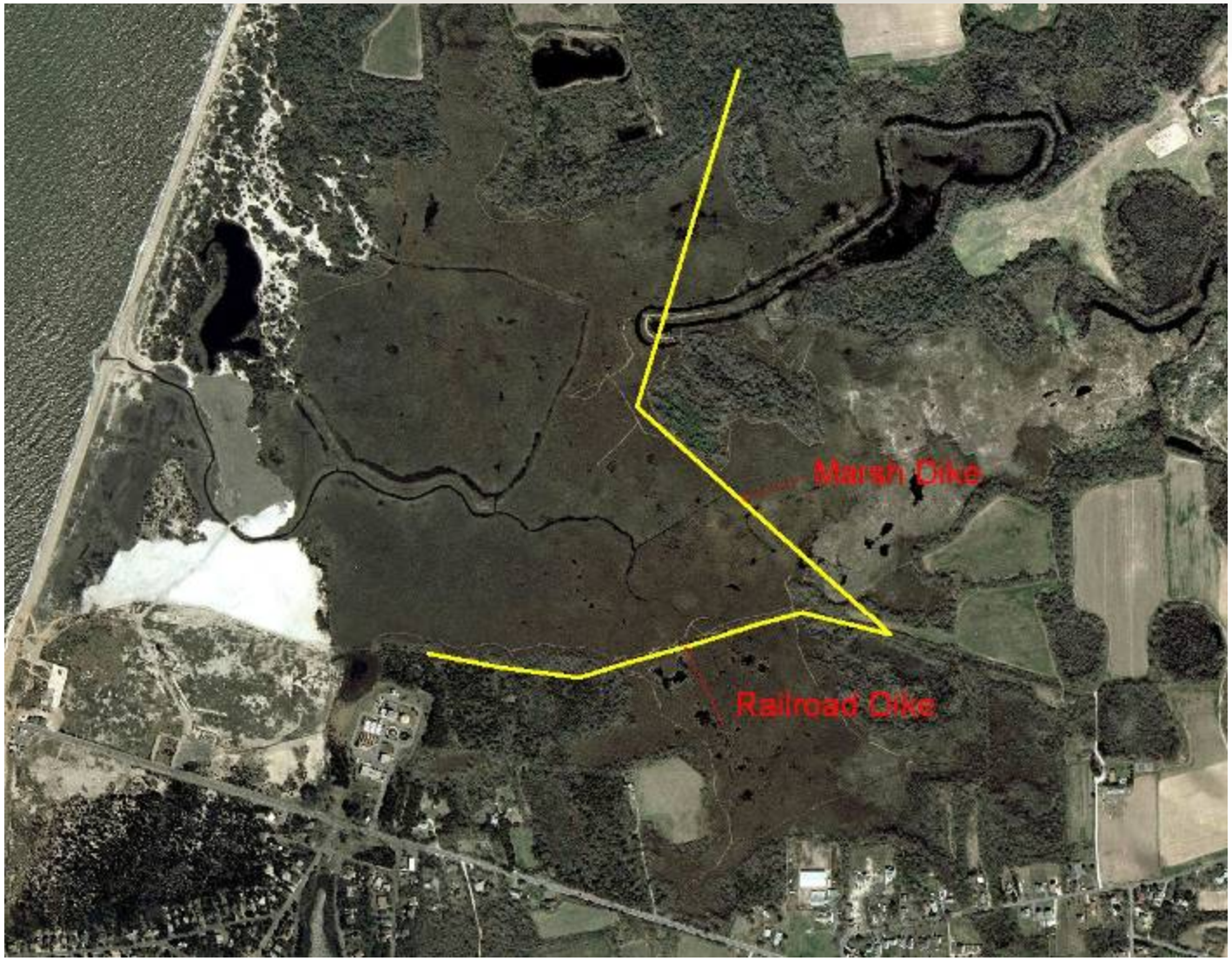
- No-action
- Chemical (herbicide spraying)
- Inundation (four alternatives)
  - Freshwater flooding
  - Full tidal inundation with earthen berms
  - Tidal inundation with water-control structure (existing channel)
  - Preferred alternative - Tidal inundation with water-control structure (new channel alignment)

Alternatives - Table 1.

Alternative	Potential Issues / Support	Potential Issues / Support	Benefits	Conclusion
No Action (current conditions)	Does not achieve project goal. Uncontrolled tidal inundation.	$0	None	Not recommended.
Chemical – Herbicide spraying (still needs new jetty to keep channel open)	Does not achieve project goal. Maintenance issues.	$1.3 million	Removal of *Phragmites* Approx. 170 acres restored.	Not recommended.
Freshwater Flooding (ponding)	Does not achieve project goal. Flooding from rainwater to local residents	$4.5 million	Improved freshwater marsh Approx. 170 acres restored.	Not recommended.

Alternatives - Table 2.

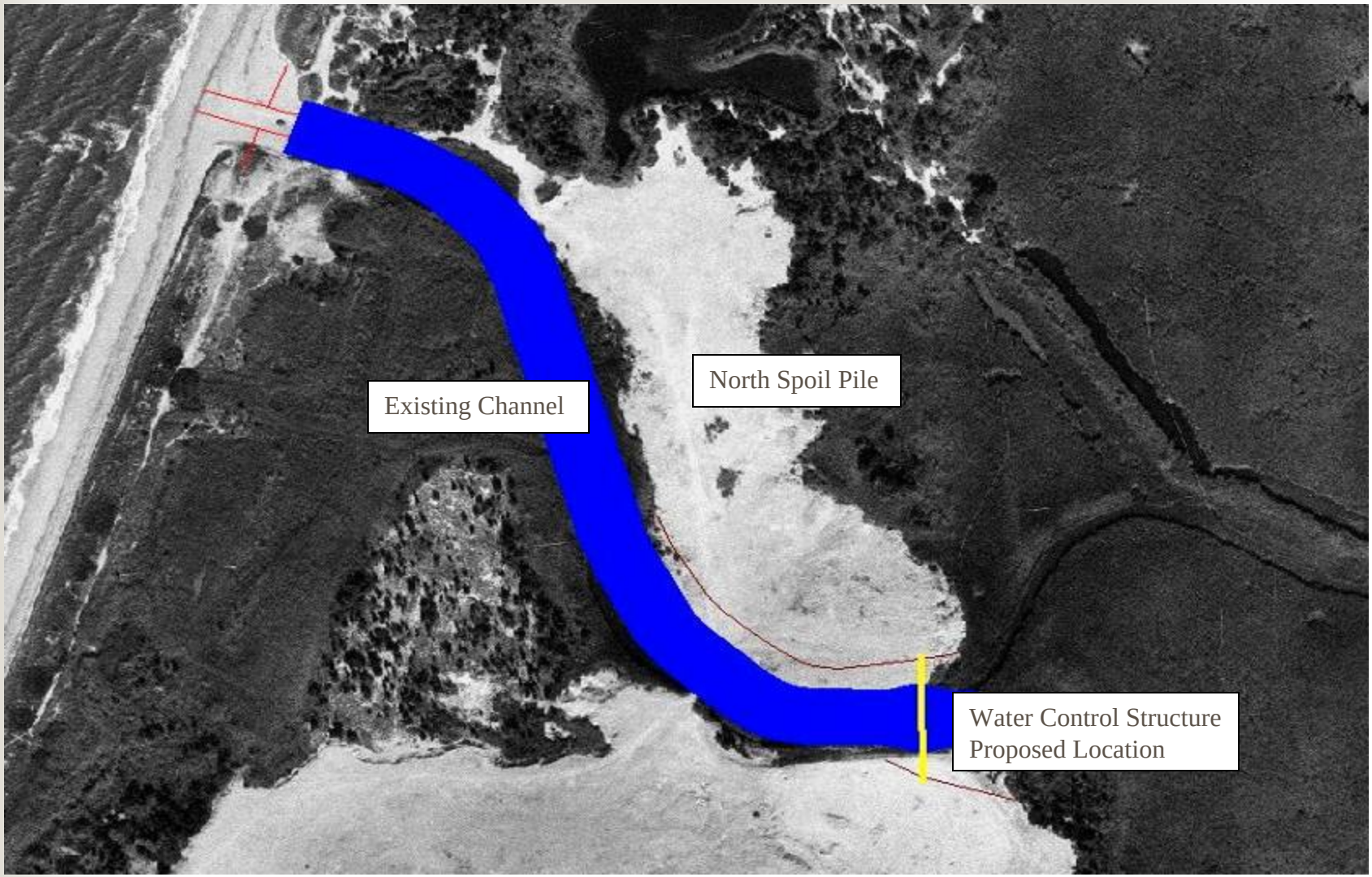
Alternative	Potential Issues / Support	Potential Issues / Support	Benefits	Conclusion
Tidal Flooding with Constructed Dike	Cost of dike material. Dike maintenance.	$3.7million	Restored estuarine intertidal wetland Approx. 170 acres restored	Not recommended.



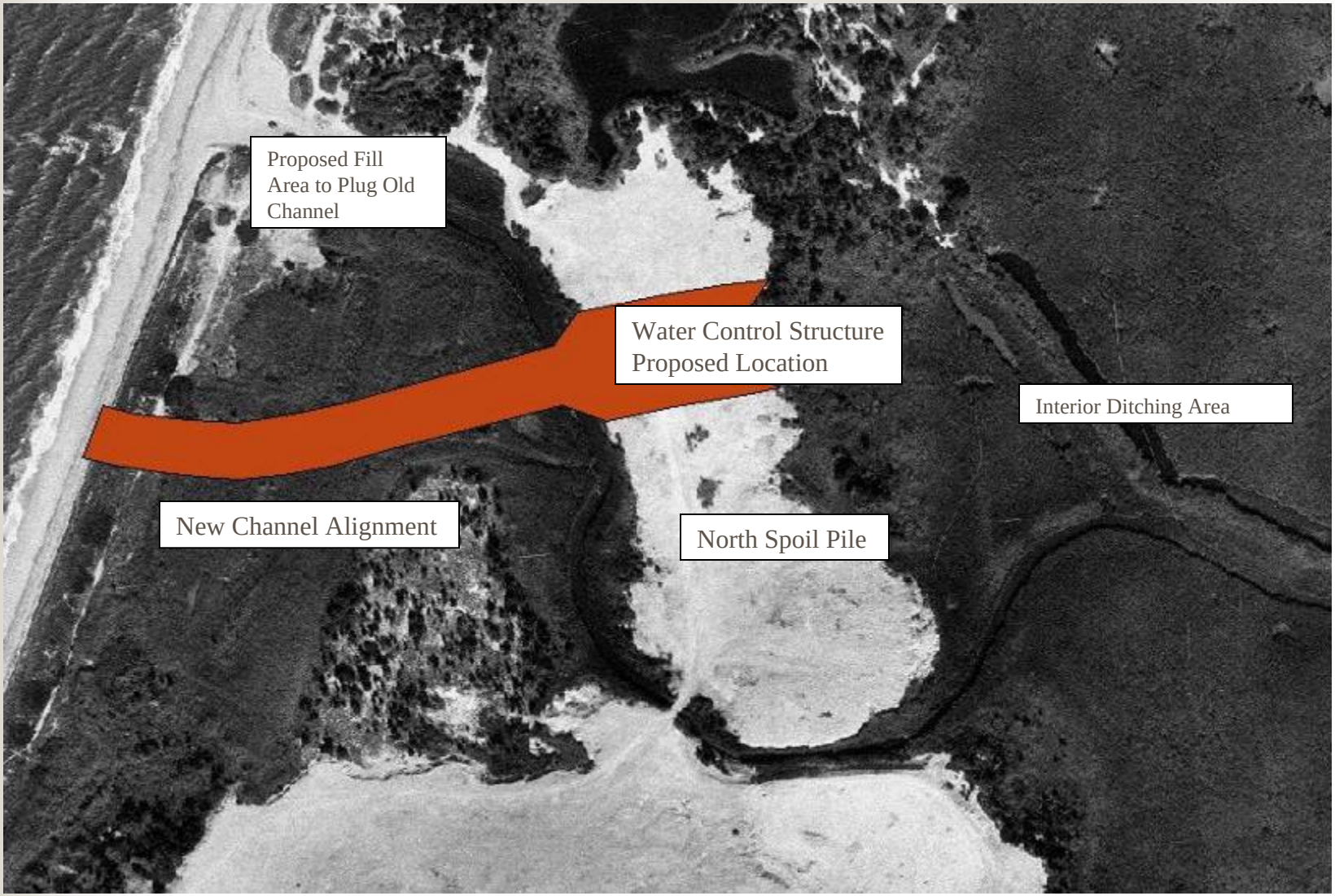
Dike Alternative

Alternatives - Table 3.

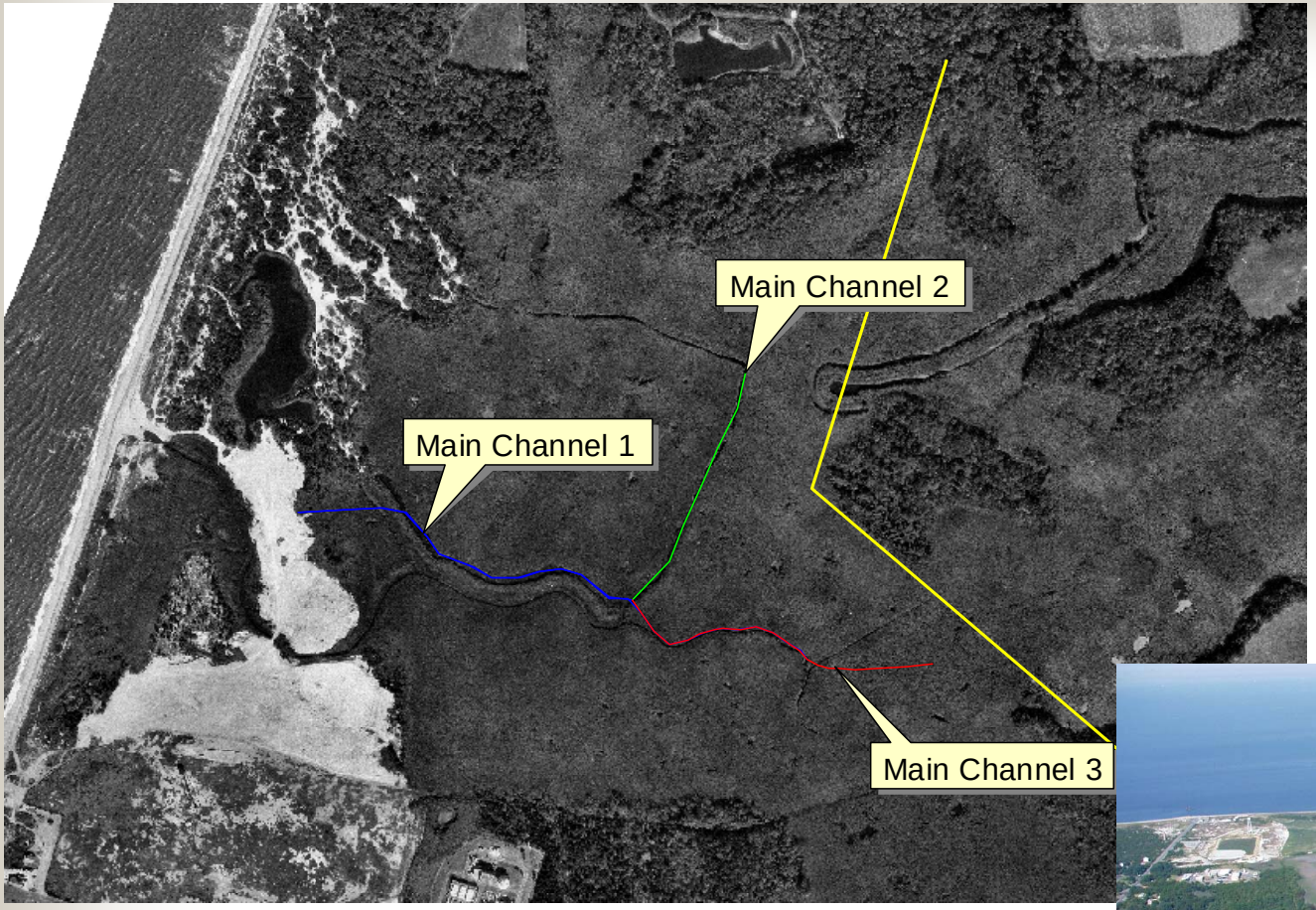
Alternative	Potential Issues / Support	Potential Issues / Support	Benefits	Conclusion
Tidal Flooding with Water Control Structure	Water control structure maintenance Non-federal sponsor's preferred plan	$2.9 million	Restored estuarine intertidal wetland. Approx. 170 acres restored.	**Recommended**



Water Control Structure Alternative with Existing Channel



Water Control Structure Alternative with New Channel (Preferred Plan)



Proposed new marsh channels

Pond Creek – Issues

- Flooding
- Saltwater Intrusion
- Fish and Wildlife Impacts

Pond Creek – Flooding Question

- Current level of flooding protection from Delaware Bay storms = 20-year.

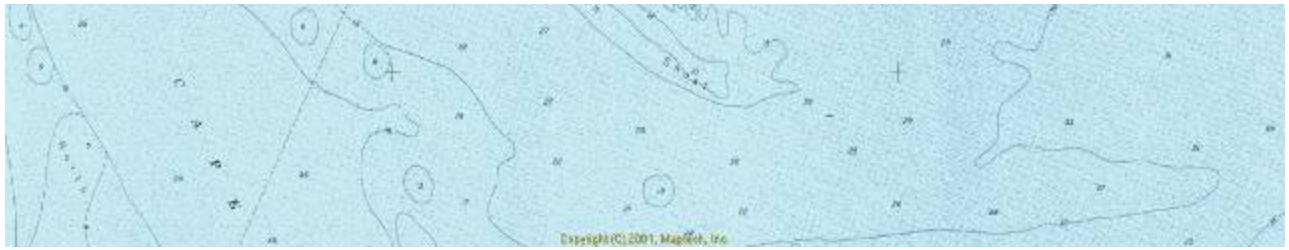
- The completed project will not decrease flood protection, but, will in fact, increase the level of storm protection.

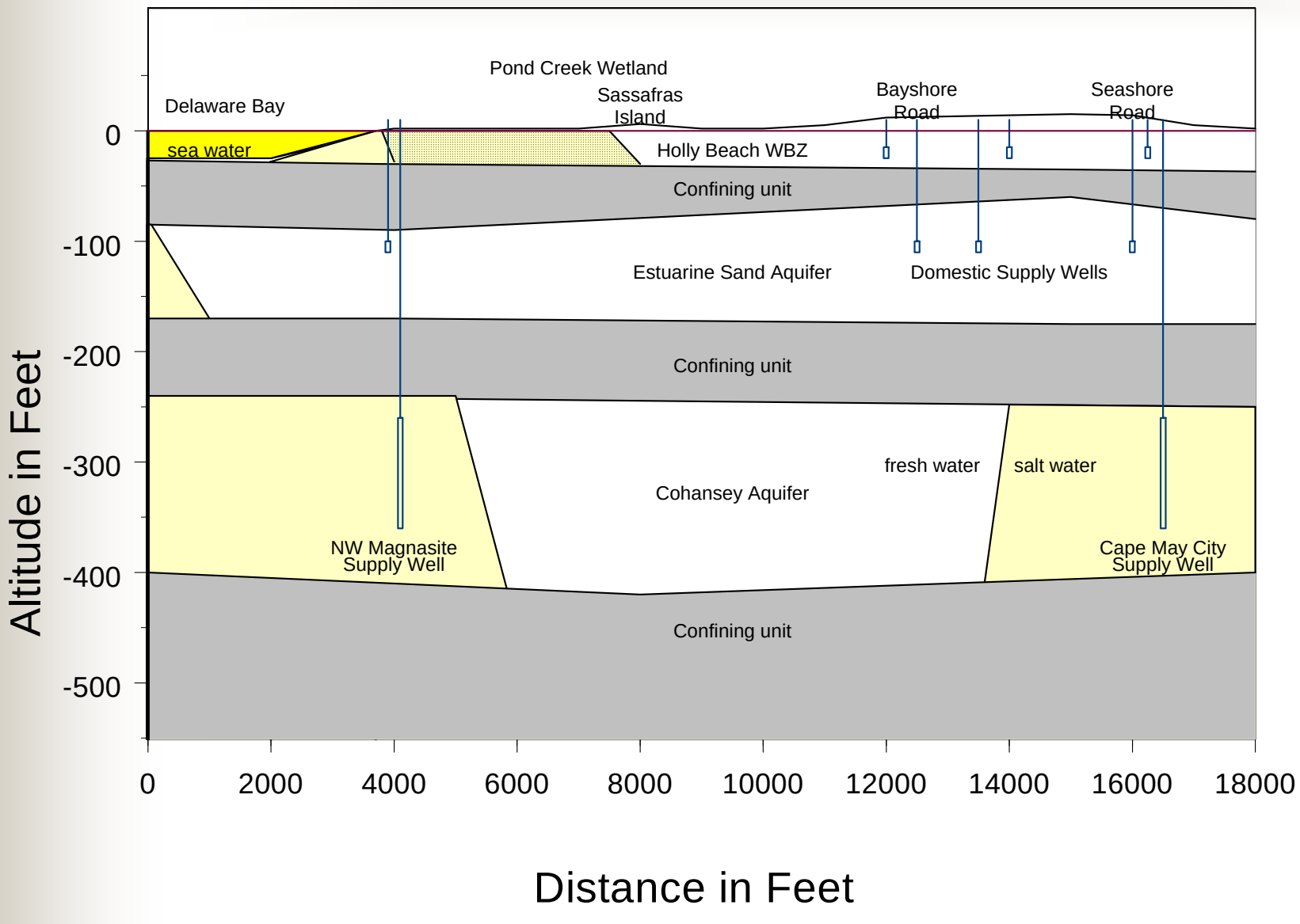
- Project will improve flood protection for local residents. The elevation of the completed water control structure will be 1.3 ft higher than the water surface elevation of the 500-year Delaware Bay storm.

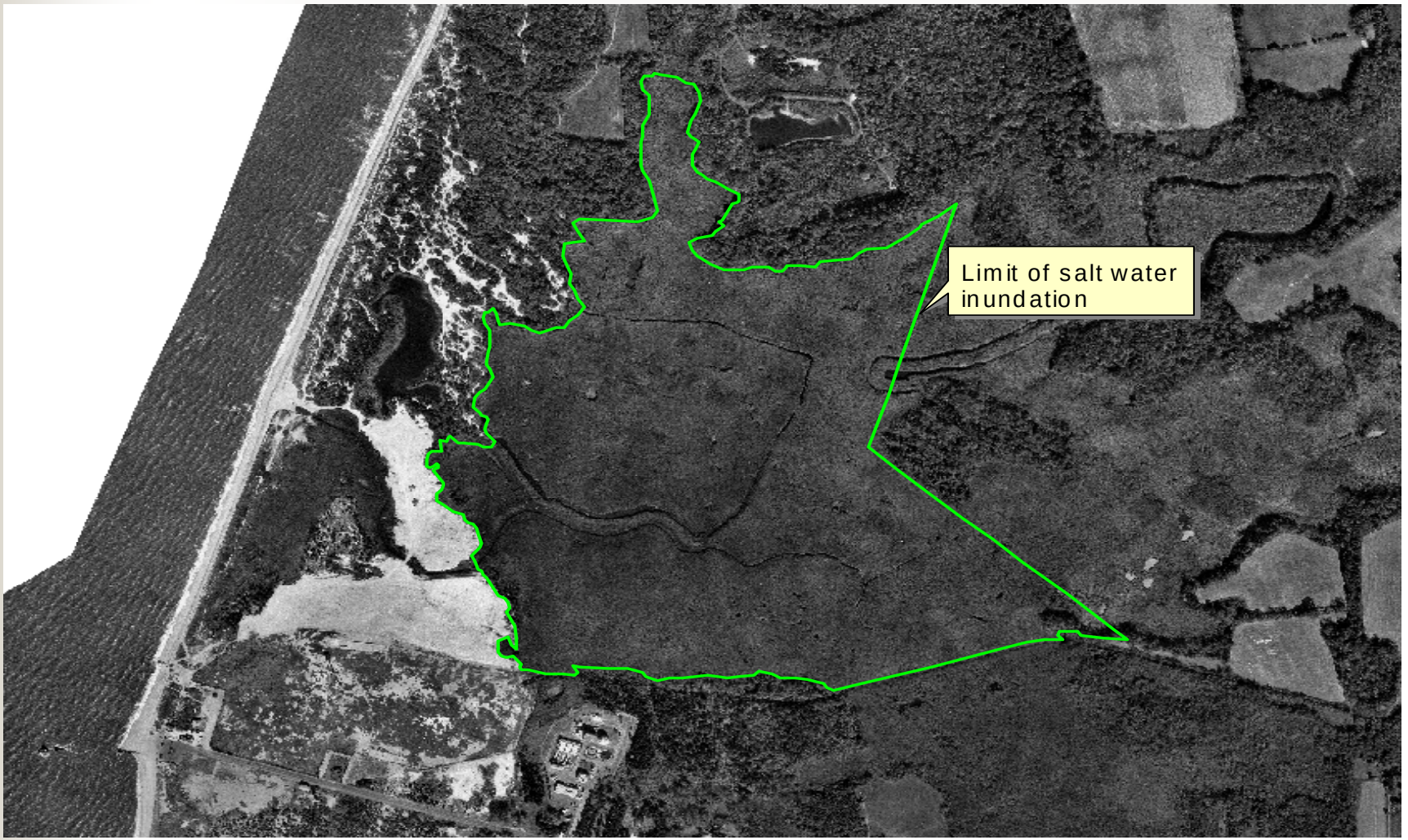
Pond Creek – Saltwater Intrusion Question

- Nearly all existing domestic and irrigation supply wells will still be one mile or more from the saltwater front.
- Most domestic-supply wells tap the estuarine sand aquifer and generally home owners only use about 200 to 300 gallons of water per day. This little withdrawal does not cause saltwater intrusion.
- Some domestic supply wells tap the Holly Beach water-bearing zone. If they are very close to the salt front (less than 200 ft) they may be susceptible to saltwater intrusion. In addition, heavily used irrigation and other large volume supply wells may cause a cone of depression that may induce limited salt water intrusion. However, the location of the well and the volume of water would be need to be considered prior to assessing the rate of intrusion. Only a few wells of this type are in the area
- Monitoring of some existing wells will be completed before and after the project to insure no impact to local wells.

Section A-A' is 18,000 ft long (a little more than 3 miles long)




Pond Creek Wetland
Delaware Bay
Sassafras Island
Bayshore Road
Seashore Road
sea water
Holly Beach WBZ
Confining unit
Estuarine Sand Aquifer
Domestic Supply Wells
Confining unit
fresh water
salt water
Cohansey Aquifer
NW Magnasite Supply Well
Cape May City Supply Well
Confining unit
Altitude in Feet
0
-100
-200
-300
-400
-500
0
2000
4000
6000
8000
10000
12000
14000
16000
18000
Distance in Feet



Estimated extent of tidal inundation into the marsh

Pond Creek – Benefits to Fish and Wildlife

- Improved habitat for fish and wildlife.
- Salt marsh is more productive than monoculture of *Phragmites*.
- Restore approximately 170 acres of native salt marsh (*Spartina*).
- Fauna that will benefit are: migratory birds, fish, waterfowl, reptiles, and mammals.

Pond Creek – Other Benefits

- Natural mosquito control (fish), using open marsh management, and will result in a reduction in use of pesticides in the project area.

- Improved recreational opportunities.

- Improved bird watching.

Pond Creek
Tentative Timeline

- October 13, 2005 – Public meeting
- November 13, 2005 – Public comment period ends
- February 2006 – Tentative date for release of Final Environmental Assessment
- May 2006 – Complete project designs*
- January 2007 – Start project construction*

*Contingent upon funding availability.

Public Comments