

Jeb Bush
Governor

Department of Environmental Protection

Northeast District
7825 Baymeadows Way, Suite B200
Jacksonville, Florida 32256-7590

David B. Struhs
Secretary

The Jacksonville Port Authority has an island that provides a suitable disposal site for the dredging and maintenance of the shipping channel. Restrictions on metal concentrations are not in place at this time. They are more concerned with the quantity of spoil than with metal concentrations in the spoil and a \$2.00 per cubic yard fee to use the island exists. The Port Authority will determine whether sufficient capacity exists before it accepts material from Miller Creek.

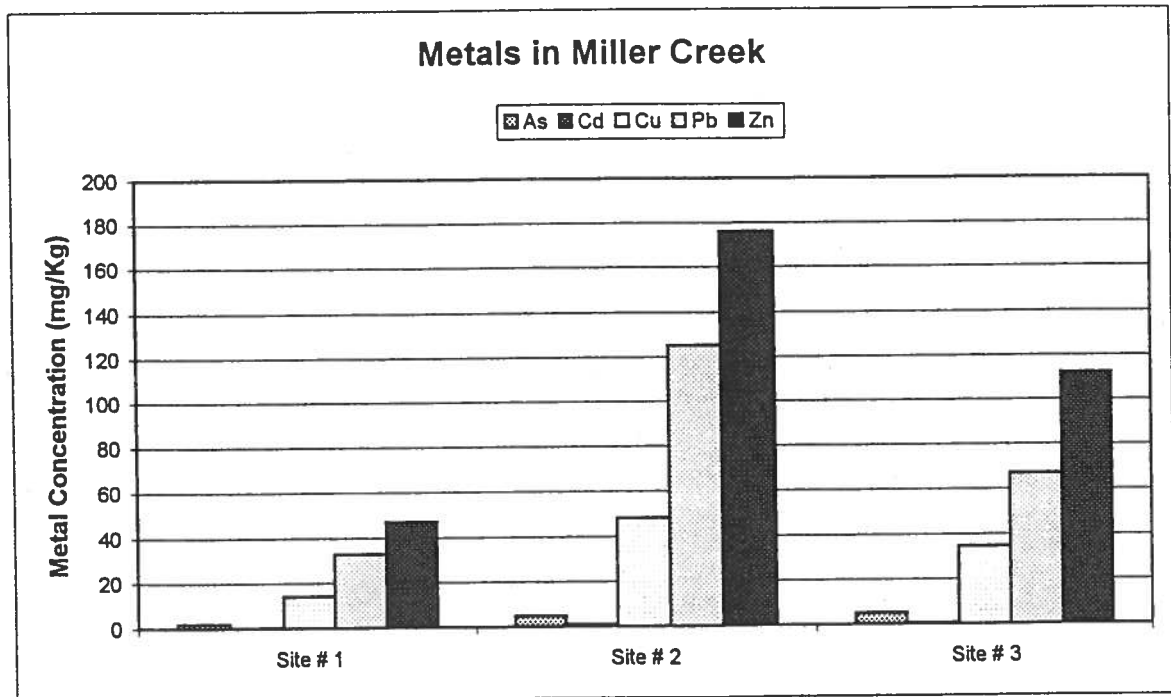
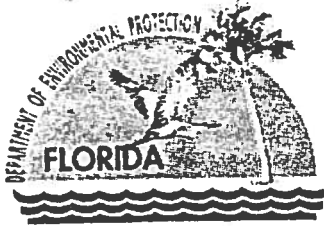


Figure 1. Metals at three sites on Miller Creek. Zinc, lead and copper concentrations exceed the expected natural range at all three sites.

The Bottom Line:

1. Miller Creek contains a higher than average level of metals in its sediments.
2. A hydraulic dredge must be used to reduce the resuspension of bottom sediments containing those metals into the water.
3. The Jacksonville Port Authority should be contacted to request space for the Miller Creek dredge spoil to rest. The usage fee is \$2.00 per cubic yard.

"Protect, Conserve and Manage Florida's Environment and Natural Resources"



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March 30, 2000

Sediment Analysis Report Miller Creek

Prepared by Bonnie Niedbalski, Environmental Specialist I

Objective:

The Department of Environmental Protection's goal in sampling Miller Creek was to analyze the sediments for possible metals and other contaminants that may result in violations of water quality standards if the creek is dredged.

Procedure:

Sediment samples were analyzed for metals and polycyclic aromatic hydrocarbons (PAHs). Trace metals are naturally found in aquatic sediments, but high concentrations cause harmful biological effects. For instance, high metal concentrations in sediments can alter metabolic processes and elevate levels of toxic substances in lower organisms that can be passed up through the food chain to organisms such as fishes. Human activities such as fossil fuel combustion and waste incineration are sources of high metal concentrations. PAHs are complex organic compounds created mostly by human activities such as oil and fuel spills, road runoff, etc.

The metal concentrations in these samples were compared to those found throughout Florida. PAHs are not standardized in Florida. However, PAH levels from Miller creek samples can be compared to levels found at nearby sites in previous studies (Florida Coastal Sediment Contaminants Atlas, DEP 1994).

Sediment samples were taken from three sites on Miller Creek at low tide on 12/28/99. The samples were sent to DEP's Central Laboratory in Tallahassee for analysis of metals and polycyclic aromatic hydrocarbons (PAHs). All samples were taken at mid-channel. The sample sites were as follows:

- Site # 1- Miller Creek, 100 yards downstream of Atlantic Boulevard.
- Site # 2- Miller Creek, midway between the mouth and Atlantic Boulevard.
- Site # 3- Miller Creek, mouth.

Results: (See Figure 1)

Site # 1-

Metals: Cadmium, copper, lead, and zinc concentrations were above the expected natural range.

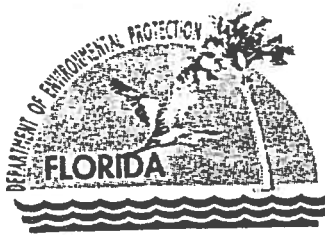
Limit

8 pages -

10 pages

Millers Creek of Jacksonville FL Clean-Up and Dredging

- I. Introduction
- II. History of Millers Creek
- III. Cause of Sedimentation
 - Storm water run-off
 - Sewage
 - Grouting of artesian well
- IV. Environmental Impacts
 - Contamination
 - Depth of water and Wild life
- V. Actions by Residents
- VI. Actions by City of Jacksonville FL
- VII. Conclusion



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PAHs: 16 PAHs were tested for, only 10 were detected (Benzoanthracene, benzopyrene, benzo(b)fluorathene, benzo(k)fluorathene, benzoperylene, chrysene, flourathene, indenopyrene, phenanthrene, and pyrene).

Site # 2-

Metals: Cadmium, copper, lead, and zinc concentrations were above the expected natural range.

PAHs: 16 PAHs were tested for, only 10 were detected (same as above).

Site # 3-

Metals: Cadmium, copper, lead, and zinc concentrations were above the expected natural range.

PAHs: 16 PAHs were tested for, only 10 were detected (same as above).

The metal concentrations found during this sampling event are based on estimated values. However, it is reasonable to assume that these values are reliable because of the location of the sample site. Miller Creek is urbanized and is in close proximity to the Jacksonville Shipyard. In addition, previous samples at nearby sites have shown high metal concentrations. Therefore, we expect that metal concentrations in Miller Creek would be similar.

According to the Florida Coastal Sediments Contaminants Atlas (DEP 1994), PAH levels just upstream, across from the Jacksonville Shipyard, are much higher than those found in Miller Creek. In addition, lead and zinc are enriched in the area across from the Shipyard. This may be source of contamination for Miller Creek.

Dredging and Disposal:

Water quality standards may be violated by dredging activities in Miller Creek. Additional controls to limit the resuspension of metals into the water column will be necessary. Such restrictions should include hydraulic dredging or other methods that have been proven to limit the resuspension of metal enriched sediments.

Lead is the only metal in Miller Creek that exceeds the direct exposure concentration limit for residential dumping sites, but not for industrial dumping sites. Therefore, the final resting place of the dredge spoil must be in an industrial setting rather than residential. No tests were performed to determine leachability of these metal contaminated sediments. Testing for leachability of metal contaminants in the sediments may need to be done in order to determine an appropriate final dumping site if the Jacksonville Port Authority is not chosen.

"Protect, Conserve and Manage Florida's Environment and Natural Resources"



Miller Creek Dredging Project

**The Jacksonville Waterways Commission
Dredging Subcommittee
March 22, 2001**



Miller Creek

Dredging Project

- **Where is Miller Creek?**
- **Description of Area**
- **Creek History**
- **Cause of Sedimentation**
- **Reasons for Dredging**
- **Neighborhood Actions**





Miller Creek

Description of Area

- Approximately 1/4 mile in length
- Width of creek varies:
 - 100 feet wide near Atlantic Blvd.
 - 350 feet wide at lagoon in middle of creek
 - 200 feet wide at mouth emptying into St. John's
- Large Cypress head south of Atlantic Blvd.
- Bordered by 31 homes
 - Most properties bulkheaded
 - Most properties have docks
- Home to many different species of waterfowl, raccoons, rabbits, manatees, and other aquatic life

MILLERS CREEK

David Solomon Hill Miller, English-
man, first settled near here in 1799
and married Anna Hogans Bagley,
widow, owner of a Spanish land grant
of 300 acres west of this creek.
D. S. H. Miller served Spain as
Capt., Rural Militia of the St.
Johns River, San Nicholas District
and as Deputy Surveyor. He sur-
veyed the streets of Jacksonville
when it was founded in June 1822.

San Antonio de Padua Historical Society

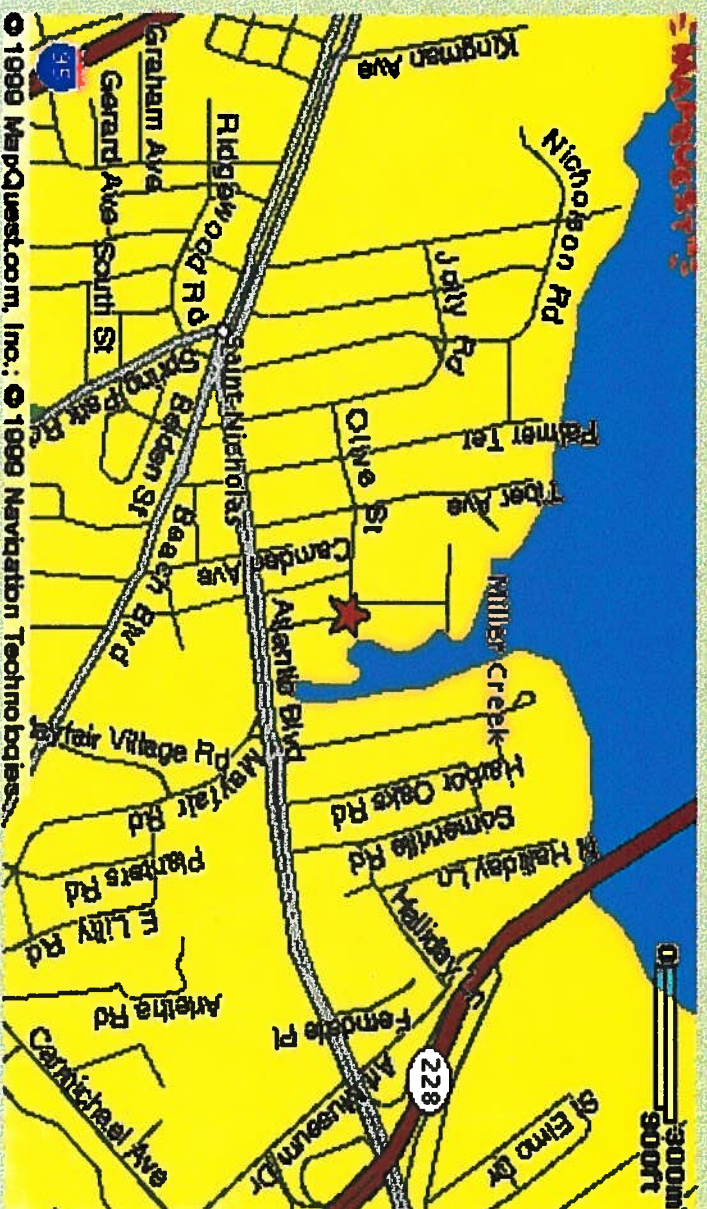
1822-1823

1822

Miller Creek

Where is it located?

- Located in the historic St. Nicholas area





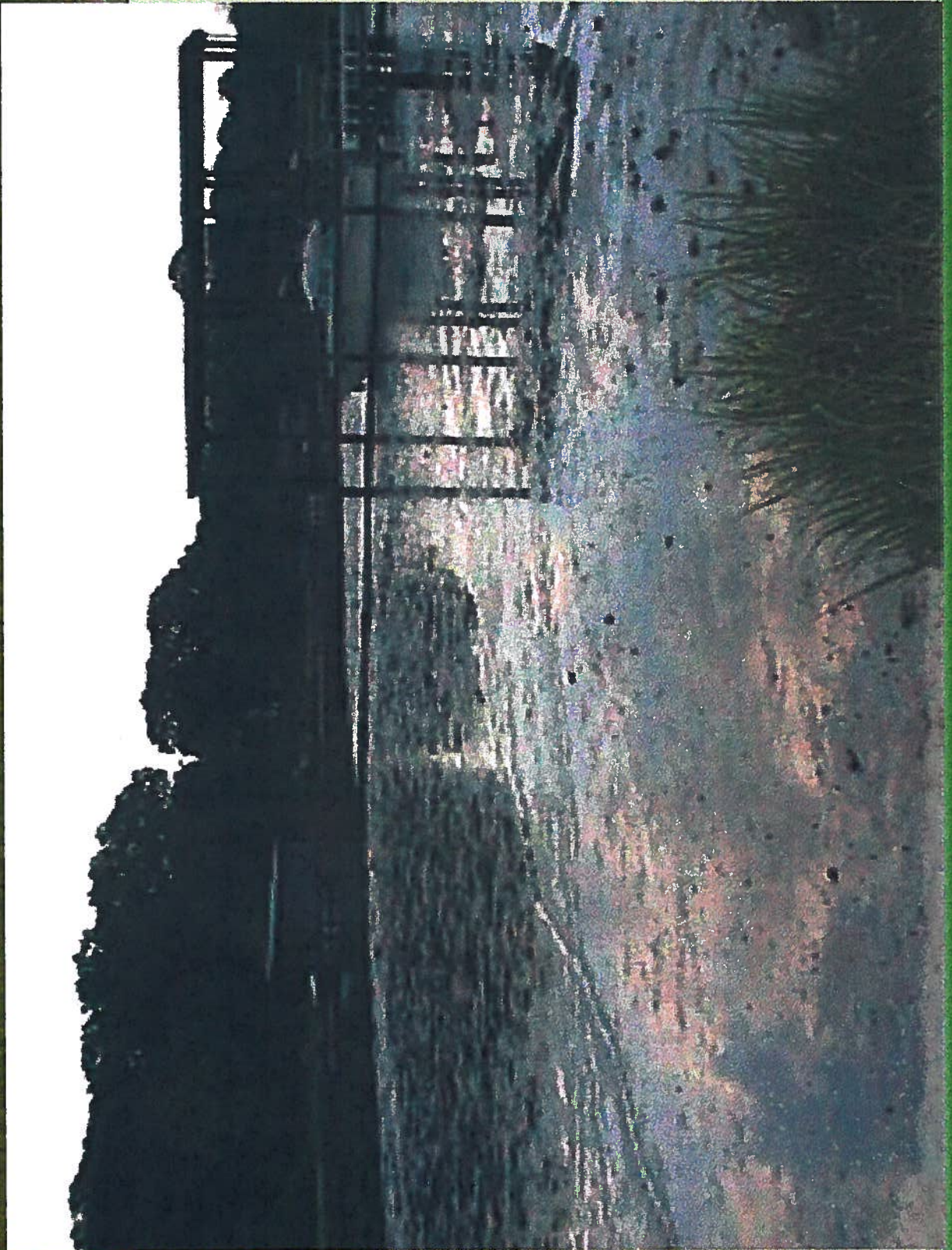
Miller Creek

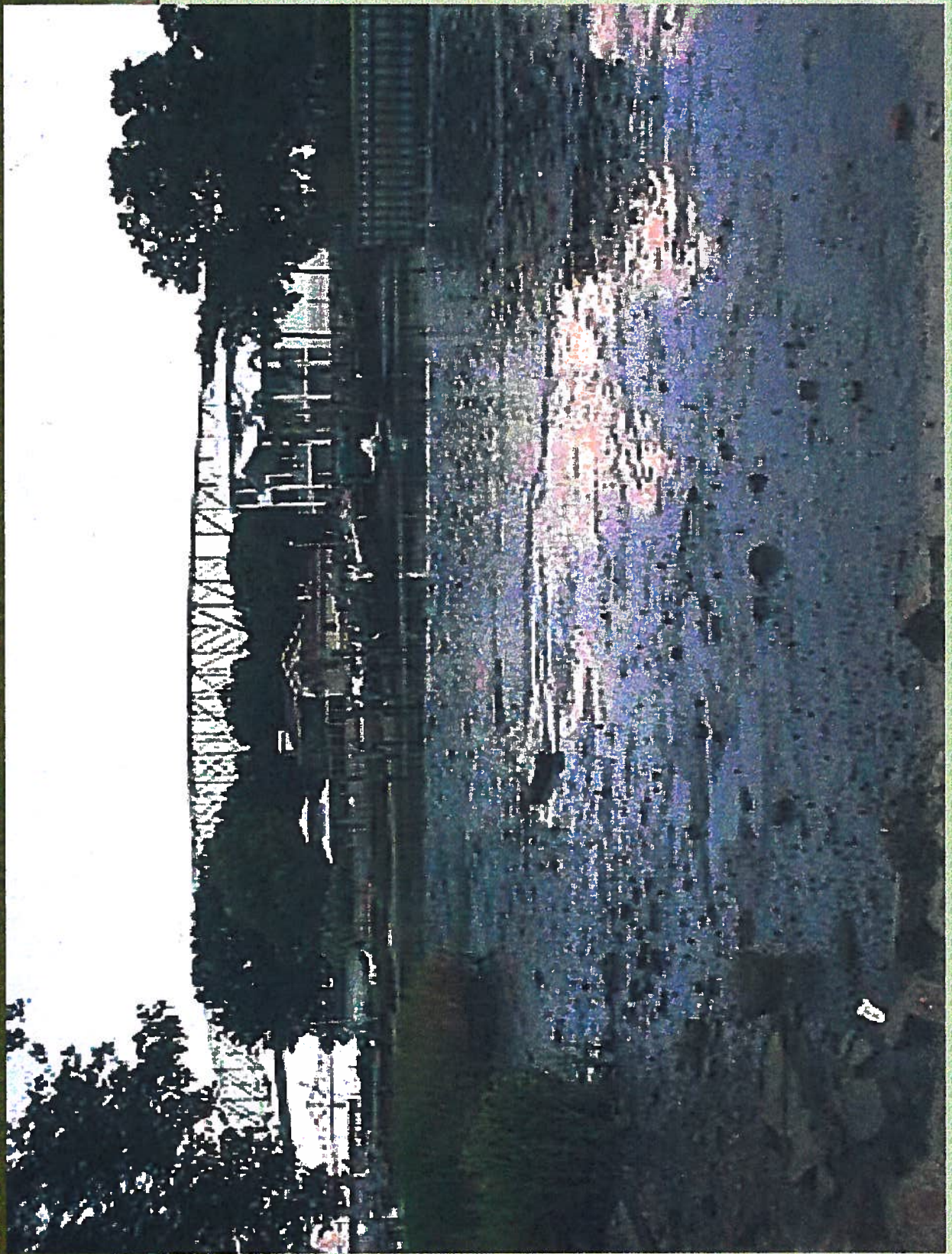
Causes of Sedimentation

- Problems began in 1960's:
 - 1966: Atlantic Blvd. widened and 6 lane bridge built
 - 1968: AT&T Building built on Beach Blvd. on edge of Cypress Marsh
 - Increase in “Storm Water” run-off from Atlantic & Beach Blvds. and surrounding basin
 - Prior to 1995: Four Sewage Treatment Plants discharged waste into the creek
 - Beach Road Chicken
 - Burger King
 - Atlantic Garden Apartments
 - Art Museum Apartments











Miller Creek Reasons for Dredging

- Designated as an Historic Creek
 - Originally surveyed by David Solomon Miller
- Positive Environmental Impact
 - Manatees
 - Fish and Other Wildlife
- Positive Residential Impact
 - Flood Control
 - Improved Quality of Life/leisure
 - Increased Property Values

Miller Creek Neighborhood Actions

- Regular meetings held by residents
- Met with Department of Environmental Protection (DEP)
- Commissioned Sediment Analysis (DEP)
- Commissioned creek drainage basin analysis (DEP)
- Regular representation at Dredging Sub-Committee Meetings
- Solicited resident feedback regarding project
 - **100%** of the creek residents approve dredging effort

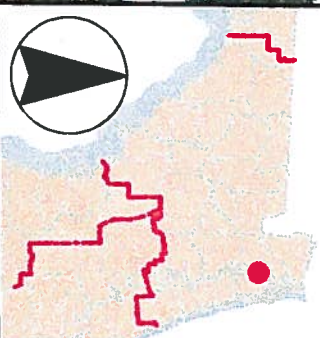
Millers Creek



LEGEND

Sample Sites

- 1 One hundred yards below Atlantic Blvd
- 2 Midway between Atlantic Blvd and mouth of Millers Creek
- 3 Mouth of Millers Creek





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Department of Environmental Protection

David B. Struhs
Secretary

August 1, 2000

Mr. Paul Mettke
1503 Gay Avenue
Jacksonville, FL 32207

Dear Mr. Mettke:

Paul

Following our meeting and subsequent telephone conversations, I am enclosing a map outlining the Miller Creek basin along with a correlating aerial photograph. Both maps were compiled using a Geographic Information System (GIS) by department staff. Since I am unable to e-mail these documents directly to you, I am enclosing copies for distribution.

I hope this basin map helps you with your community effort and meets your immediate needs. Should you require anything further, please do not hesitate to contact me at 904/448-4300, extension 210, or by e-mail at deena.wells@dep.state.fl.us.

Sincerely,

Deena M. Wells
Community Affairs Coordinator
Northeast District



St. Johns River

Holmesdale

Traymore

Phillips

San Diego

St. Nicholas

Emerson

Spring Park

Hart Beach

Miller Creek Drainage Basin

Carmichael J. Terrace

Commodore Point

Halliday

Atlantic

I-95

Note: This map was prepared by the Department of Environmental Protection for informational uses only and does not conform to National Map Accuracy Standards. More information regarding data portrayed on this map can be obtained by contacting the Department of Environmental Protection.

Miller Creek Drainage Basin



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February 22, 2001

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Your statement of preference at this point will in no way obligate you monetarily nor will it be a binding commitment.

If you have any questions or comments you may address them to Paul Mettke at 396-5598.

Please check your preference below:

- Approval of the dredging effort
 Disapproval of the dredging effort

Thank you in advance for your cooperation.

Please sign below and take this letter by 2/28/01 to your neighbor:

Paul Mettke
1503 Gay Ave.
Jacksonville, FL 32207

NAME	TED M CORLEY
ADDRESS	1516 GAY AVE 32207
TELEPHONE NUMBER	398-7541

February 22, 2001

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Paul Mettke
1503 Gay Ave.
Jacksonville, FL 32207

NAME	REYNALDO A. CORTER
ADDRESS	1645 Rusty Rail Rd
TELEPHONE NUMBER	Jax. FL 32225 (904) 644 5600

February 22, 2001

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Paul Mettke
1503 Gay Ave.
Jacksonville, FL 32207

NAME	<i>Harold C. Churchill Jr</i>
ADDRESS	<i>1401 Gay Ave</i>
TELEPHONE NUMBER	<i>398-8424</i>

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Paul Mettke
1503 Gay Ave.
Jacksonville, FL 32207

NAME	Tim & Robyn Cebulko
ADDRESS	1321 Morier
TELEPHONE NUMBER	398 4771

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Please sign below and take this letter by ^{3/12/01}~~2/28/01~~ to your neighbor:

~~John Rowland~~
~~1266 Mayfair Rd.~~ 1503 GAY AVENUE
Jacksonville, FL 32207

NAME	<i>Invest of Kerry Adness</i>
ADDRESS	<i>1305 Marcell St.</i>
TELEPHONE NUMBER	<i>396-4626</i>

February 22, 2001

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Please sign below and take this letter by 2/28/01 to your neighbor:

John Rowland
1266 Mayfair Rd.
Jacksonville, FL 32207

NAME	Barbara K. van der Heyde
ADDRESS	1432 Mayfair Rd.
TELEPHONE NUMBER	(904) 396-1826

February 22, 2001

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~~John Rowland~~ Paul Mettke
~~1266 Mayfair Rd.~~ 1503 GAY AVENUE
Jacksonville, FL 32207

NAME	T GEOFFREY + KAREN HECKIN
ADDRESS	3441 MORIER ST
TELEPHONE NUMBER	396 0324

February 22, 2001

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John Rowland
1266 Mayfair Rd.
Jacksonville, FL 32207

NAME	MACK & FREDA JOHNSON
ADDRESS	1416 MAYFAIR RD
TELEPHONE NUMBER	398-1219

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1266 Mayfair Rd.
Jacksonville, FL 32207

NAME	DERIK F. FLINT
ADDRESS	1292 MAYFAIR RD.
TELEPHONE NUMBER	399-8807.

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John Rowland
1266 Mayfair Rd.
Jacksonville, FL 32207

NAME	Hansen, James & Alma
ADDRESS	1442 Mayfair Rd
TELEPHONE NUMBER	399 1117

February 22, 2001

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John Rowland
1266 Mayfair Rd.
Jacksonville, FL 32207

NAME	JOHN RAYMOND
ADDRESS	1254 MAYFAIR
TELEPHONE NUMBER	398-1620

February 22, 2001

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John Rowland
1266 Mayfair Rd.
Jacksonville, FL 32207

NAME	James M. Boyer & Elizabeth D. Essey
ADDRESS	1536 Mayfair Rd, Jay, FL 32207
TELEPHONE NUMBER	904-398-4298

February 22, 2001

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John Rowland
1266 Mayfair Rd.
Jacksonville, FL 32207

NAME	Hartley
ADDRESS	1510 Mayfair
TELEPHONE NUMBER	346-0401 E-mail: shartley

@ coffeeperks.com