

Osborne Reef Waste Tire Site Removal 2008 Project
Project Evaluation
August 25 2008

Contract number SW224, between Florida Department of Environmental Protection and Broward County requires the submittal of a Project Evaluation Report prior to payment for tasks completed under the project, specifically:

VII. Project Evaluation

The Contractor, in cooperation with project partners, will evaluate diver productivity; tire recovery, and transport techniques; tire recovery, transport and processing costs; level of reef protection and restoration achieved; and will prepare a report on project evaluation findings.

Permits

On February 1, 2008, Broward County received the Notice of Intent to Issue the Environmental Resource Permit from the Florida Department of Environmental Protection (FDEP). As required by the Notice of Intent, Broward County published, in the Sun-Sentinel, the required Publication of Notice, confirmation of which was sent back to FDEP. The approved Environmental Resource Permit was issued on February 22, 2008 and received by Broward County on February 25, 2008.

A Special Activity License for removal and transplantation of scleractinian corals was requested from the Florida Fish and Wildlife Conservation Commission (FWC) on March 8, 2008, however it was not received until the end of May 2008.

Crane Operations

Broward County entered into a multi-year agreement with Spirit Crane Inc. for crane services to be used for LCU offload and reload in addition to a 40-ton crane to be used onboard the LCU during the entire operation. There were no issues with the crane or operator and it is expected that Spirit Crane will provide crane services for the 2009 and 2010 operations.

Port Everglades

In April 2008, the Port Everglades Department requested from the Board of County Commissioners (BOCC) that dockage and associated fees for the LCU be waived up to \$37,000. This was approved and there were no issues with dockage at the port.

The LCU did require bilge pump-out services on two separate occasions that were not covered by the Port Everglades fee waiver. This was an unexpected task and cost that may have been the result of the Army not requesting IRT funds to cover the services while in Ft. Lauderdale. Mr. Clint Smith, LCU skipper, stated he would recommend these funds be included in future IRT packets. Broward County will follow up with Army personnel prior to the 2009 operation to determine whether pump-out services will be required.

Military Operations

On February 5, 2008, Pat Quinn, Ken Banks, Lou Fisher, and Joe Ligas (Broward County) met with 1LT Scott Sann, Sgt. William Vaughn, and Sgt. Andrew Harrison (US Army Dive Company) and LT Mike Powell (US Navy Operational Support Unit Ten) to discuss the upcoming operation, facilities at Port Everglades, staging at the Coast Guard station, and expectations from various participating parties.

The US Army Dive Company arrived in Ft. Lauderdale on April 3, 2008. Due to a delay caused by heavy sea conditions, the LCU arrived in Port Everglades on April 8, 2008 and was offloaded the following day. Conex boxes containing the military's operational equipment were transported to the US Coast Guard Station Ft. Lauderdale for setup/storage. Transportation vehicles and drivers were supplied by the Broward County Parks and Recreation Department.

Broward County personnel, along with LT Sann and two Army divers, took the County boat to the tire site and deployed buoys along the eastern and western edge of the tire field. The buoys served to mark the reef edge and as such were guides for the LCU in anchoring each morning. Additionally, 3 buoys were placed in a triangular fashion on the south-western corner of the tire field as dive location markers for the Army divers to begin working. The reef edge buoys were ground-truthed by divers, however the dive location buoys were not due to building sea conditions.

Dive operations began on April 10, 2008 and continued through May 23, 2008. Divers worked an estimated 27 days with 16 dive days cancelled due to adverse weather conditions. Sustained wind speeds of 10-15 knots create wave conditions of 2-4 ft which was determined to be the safety limit for small boat and crane operations. The number of working days and cancelled days differ in this report from the US Army After Action Report due to variations in required reporting (e.g. training dive days in Port Everglades on cancelled tire operation days).

At the request of Broward County, a log was being kept on board the LCU to document daily departure from and return to the port, anchor deployment and retrieval times, and the time the first lift bag was on the surface each day. However, due to post-tire operation reassignments of the LCU crew, Broward County personnel has not been able to obtain a copy of the log.

An estimated 44,000 tires (Table 1) were removed over the course of the operation by approximately 66 military personnel including boat drivers and LCU crew. When conditions were ideal (e.g. calm seas, no equipment failures) the divers were able to recover approximately 2,500 tires during a single day. With an estimated 1,200+ tire load for open-top trailer, this appears to be the maximum productivity that can be expected during the course of the operation. The required time to for the LCU to weigh anchors, return to Port Everglades, offload/reload trailers, and return to the dive site will prohibit more than one load (two trailers) being recovered in any given day.

Table 1. Dive date, number of tires retrieved, and number of trailers utilized with asset numbers during the 2008 operation.

FORT LAUDERDALE TIRE SALVAGE 2008			
Date	Total # Tires	# Trailers Taken	Trailer Serial #
8-Apr			LCU arrive
9-Apr			LCU offload
10-Apr	435	0	N/A
11-Apr	791	0	N/A
12-Apr	961	0	N/A
13-Apr	287	0	N/A
14-Apr	0	2	N/A
17-Apr	1312	1	J27
18-Apr	1480	1	4502
20-Apr	1658	0	N/A
21-Apr	0	2	501-01, CPL504
22-Apr	2116	1	CPL506
23-Apr	1695	1	509
26-Apr	1310	2	J27, 48103
28-Apr	0	0	N/A
29-Apr	968	0	N/A
30-Apr	625	0	N/A
1-May	0	0	N/A
2-May	0	1	CPL504
3-May	0	0	N/A
5-May	2413	2	4502/J27
6-May	2149	1	CPL506
7-May	1945	2	N/A
10-May	2602	2	CPL504, 4502
12-May	2012	2	J27, CPL506
13-May	2256	2	CPL510, 48103
16-May	2473	2	CPL512, CPL506
17-May	2034	2	J27, CPL504
19-May	2546	2	4502, 48103
20-May	1763	1	CPL512
21-May	2663	2	J27, 48103
22-May	2128	0	N/A
23-May	1829	2	N/A
24-May	1483	1	N/A
27-May			AAR at NSUOC
28-May			LCU reload
30-May			Divers depart
31-May			LCU departs
Total	43934		

Please see the included “After Action Review – Used Rubber.doc” and “Fort Lauderdale IRT AAR.doc” files supplied by the US Army for further details on the day-to-day operation.

An After-Action meeting was held on June 27, 2008 to discuss the 2009 operation. Attendees were Jan Rae Clark and Lauren O'Conner (FDEP), Terry Gray (consultant to FDEP), 1LT Scott Sann, Sgt. William Vaughn, Sgt. Andrew Harrison, Pat Quinn, Ken Banks, Lou Fisher, and Joe Ligas (Broward County), and Will Nuckols (Coastal America).

There were very few concerns or recommendations for the 2009 operation. These are listed below:

- 1) Army will request larger patrol vessels (9m) rather than the 7m vessels used in 2008.
- 2) Army may redesign the lift bag system since the nature of the operation was damaging or destroying the present equipment.
- 3) LT Sann stated the Army Dive Company had initially allocated time in May-July for the operation and we should consider a February or March 2009 pre-operation meeting with FDEP, Broward County, and the US military to formalize. On July 30, 2008, it was communicated to Broward County from FDEP that CPT Denike, US Army Dive Company Commander has committed to June 14 – July 31 for the 2009 operation.
- 4) Army requested Broward County preset additional buoys to ensure the divers are positioned in an area with a high density of tires.

Post survey dives of the tire field by Broward County personnel appeared to indicate the military divers were working in the north-western corner of the tire field rather than the south-western corner where buoys were initially deployed (Figure 1). This could have been the result of the military divers moving the buoys themselves, buoys being moved due to wave conditions, or recreational divers moving the buoys.

Prior to the 2009 operation, Broward County personnel will deploy and ground truth multiple dive location buoys to ensure the military divers are in an area to allow maximum productivity. Attempts will be made to verify the work locations on a weekly basis and GPS coordinates will be taken if possible.

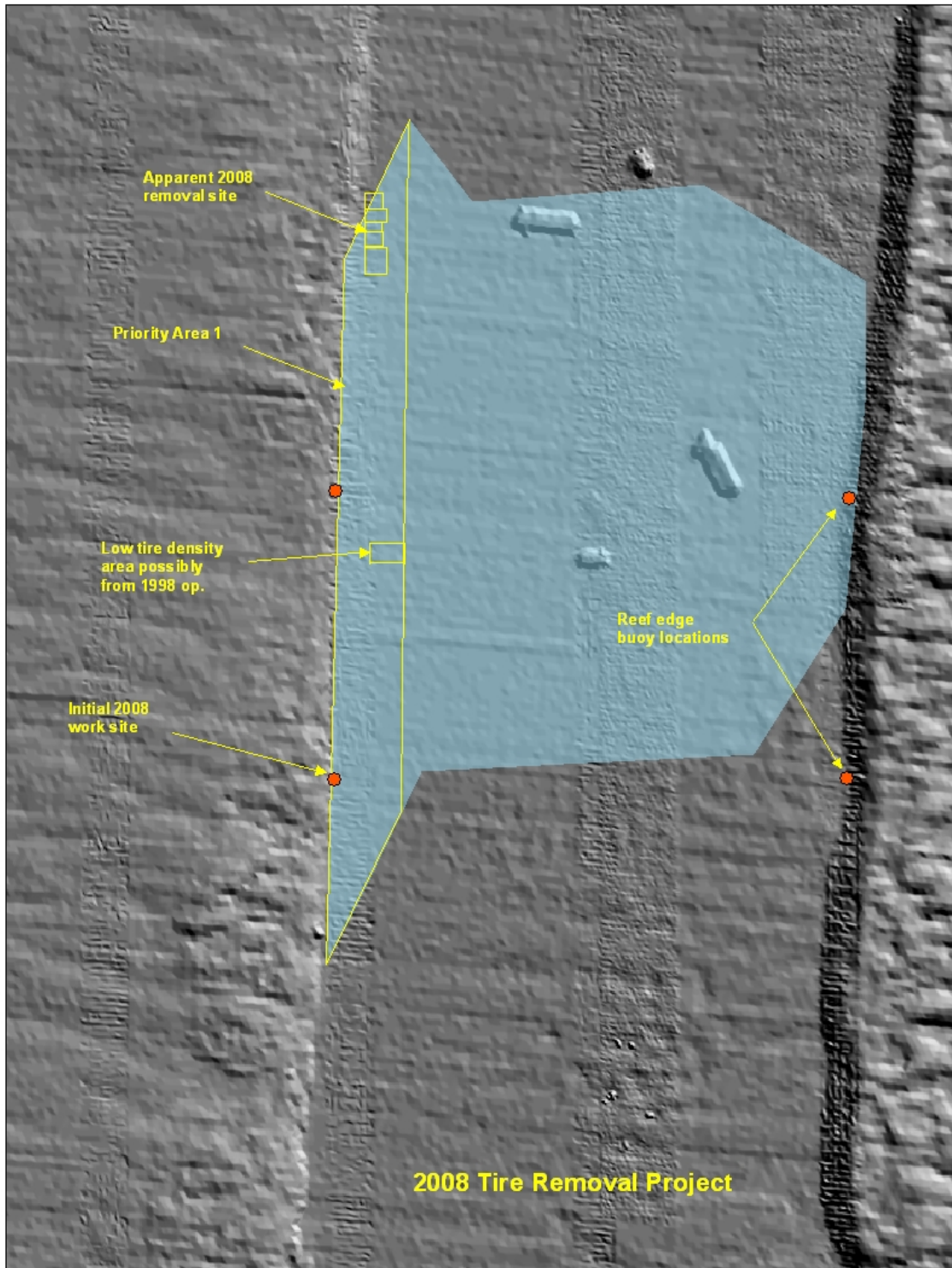


Figure 1. Layout of the tire field off Ft. Lauderdale. Blue area designates general size and shape of the tire field. The four red dots represent locations of reef edge buoys deployed for the operation. The bottom left edge buoy was the initial work site for the 2008 operation.

Tire Transport

Florida Transportation Services (FTS) provided stevedore services for the duration of the project and MAC Tire Recycling provided tire transportation and disposal services. Although multiple contact information was provided for both companies, at times there were difficulties getting in touch with the appropriate person either for trailer offload/reload (FTS) or for general trailer information (MAC). Specific issues that should be addressed for future operations are:

- 1) FTS yard mule drivers were “aggressive” loading and offloading trailers on the LCU. The LCU structure was scratched and scraped, trailer landing gear was damaged and the left side mirror of the crane was torn off.
- 2) MAC Tire Recycling did not always maintain the required number of trailers on the storage lot.
- 3) On at least two occasions, 50 ft trailers were staged by the port for use on the LCU. This created time delays loading and offloading the trailers and created a much more congested and hazardous situation onboard the LCU. Military personnel were instructed by Broward County to not allow loading of any trailers longer than 48 ft.

Summary of Recommendations:

Permits:

Broward County will submit the Special Activity License application in early 2009 to allow FWC additional time for processing.

Port Everglades:

Broward County will follow up with Army personnel prior to the 2009 operation to determine whether pump-out services will be required.

Military Operations:

Broward County will collect weekly activity logs from LCU to better document work activities.

Prior to the 2009 operation, Broward County personnel will deploy and ground truth multiple dive location buoys to ensure the military divers are in an area to allow maximum productivity. Attempts will be made to verify the work locations on a weekly basis and GPS coordinates will be taken if possible.

Tire Transport:

Broward County will work with FDEP and the tire disposal contractor to ensure required numbers and sizes of trailers are available as specified in the disposal contract.