

PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS
AGENDA ITEM SUMMARY

Meeting Date: October 4, 2011

Consent Regular
 Public Hearing Workshop

Department:

Submitted by: Information Systems Services
Submitted for: Countywide GIS

I. EXECUTIVE BRIEF

Motion and Title: Staff recommends motion to receive and file Task Order No. 2 to contract (R2006-2518) with Woolpert, Inc. for \$75,733 for coastal aerial photography.

Summary:

Woolpert, Inc. was selected using the Consultant Competitive Negotiations Act (CCNA) process on November 21, 2006 to perform digital ortho photography and planimetric mapping for the County (R2006-2518). Task Order No. 2 with Woolpert, Inc. is to provide countywide coastal aerial photography for Environmental Resources Management (ERM). Woolpert, Inc. is an Ohio-based company with offices in Orlando and Miami, FL. This Task Order was under \$100,000 and was previously executed by the ISS Director; and therefore, it is now being submitted for receive and file purposes. Funding for Task Order 2 in the amount of \$75,733 is funded by ERM. Delegation of signature authority was delegated to the ISS Director at the time the contract was approved. Countywide (PK)

Background and Justification:

In November, 2006, contracts were established with three firms: Surdex Corporation; BAE Systems; and Woolpert, Inc., to provide mapping services. Planimetric mapping entails delineating a list of features, such as drainage, building outlines and edge of pavements, from aerial photos to within +/- 0.5 foot accuracy. Digital ortho photography provides aerial photos rectified to match the earth's surface location. All Task Orders in excess of \$100,000 require Board approval.

Attachments:

1. One original Woolpert, Inc. Task Order No. 2
2. ERM Budget Availability Statement dated 2/23/11

Recommended by: Steve Boudelon 9-15-2011
Department Director Date

Approved by: [Signature] 9/23/11
County Administrator Date

II. FISCAL IMPACT ANALYSIS

A. Five Year Summary of Fiscal Impact

Fiscal Years	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
Capital Expenditures	\$75,733	\$0	0	0	0
Operating Costs	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
External Revenues	<u>\$ 0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Program Inc (County)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
In-Kind Match (County)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
NET FISCAL IMPACT	<u>\$75,733</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>

Additional FTE
Positions (Cumulative) 0 0 0 0 0

Is Item Included in Current Budget Yes X No

Budget Account Number(s): **Fund 3900 Dept. 381 Unit M700 Object 3120**
Fund 3652 Dept. 381 Unit Various Object 3120
 (See attached ERM BAS for additional accounts)

B. Recommended Sources of Funds / Summary of Fiscal Impact

C. Department Fiscal Review: *Tom St. Beal* 9/14/11

III. REVIEW COMMENTS

A. OFMB Fiscal and/or Contract Administration Comments:

Diary 9/20/11 *Ann L. Jewell* 9/21/11
 WS 9-16-11 OFMB 52 9/20/11 Contract Administration

B. Legal Sufficiency:

Paul F. Jr 9/23/11
 Assistant County Attorney

C: Other Department Review:

 Department Director

TASK ORDER

TASK ORDER # 2

CONSULTANT Woolpert, Inc.

ACCOUNT # See BAS from ERM dated 2/23/2011 CONTRACT R2006-2518

COUNTY PROJECT MANAGER Kelly Ratchinsky PHONE 355-3958

PROJECT NAME 2011 Countywide Coastal Aerial Photography

LOCATION Palm Beach County Coasts and Inlets

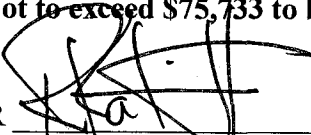
TASK DESCRIPTION

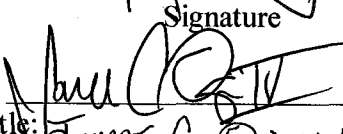
Color Digital Orthophotos 1"= 600' scale, 0.33 foot resolution per attached specifications.

DELIVERABLES +/- See Attached DUE DATE November 21, 2011

TASK ORDER TYPE Lump Sum RETAINAGE 10%

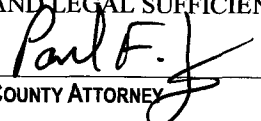
TOTAL AMOUNT Not to exceed \$75,733 to be funded ERM

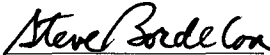
PROJECT MANAGER  DATE 4/5/2011
Signature

CONSULTANT  DATE 4/4/2011
Printed Name/Title: Frances C. Ogier IV / Practice Leader

PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS


Steve Bordelon, Director of ISS

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY

COUNTY ATTORNEY

APPROVED AS TO
TERMS AND CONDITIONS

ISS DEPARTMENT DIRECTOR



February 28, 2011

Kelly Ratchinsky
Countywide GIS Coordinator
Palm Beach County
Vista Center
2300 N. Jog Road, 4th Floor Office 4W-50
West Palm Beach, FL 33411-2743

RE: 2011 Coastal Orthophoto Revised Proposal

Dear Kelly:

Thank you, again, for the opportunity to propose on the coastal orthophoto development. Based on our discussions of the scope and coverage east of the coastline, we have developed the following revised fee proposal. Again, the 2011 Technical Specifications were followed to develop our fee estimate - some items to note with our work plan are as follows:

- Woolpert proposes to acquire the RGB aerial imagery using a digital sensor – a Leica ADS80. This is a push-broom sensor, so it does not collect individual frames of imagery, but rather, collects imagery in continuous strips the length of the flight lines. Where the 2011 Technical Specifications define acquisition and delivery parameters in terms of a film or a frame camera, we'll fly and deliver as those criteria apply to the ADS80 sensor. More specifically:
 - Raw ground pixel resolution is specified to be 0.33 feet as captured with film at 1"=600' scale (3,600 feet above ground level). We are proposing to collect imagery with our ADS80 sensor at the specified 0.33 feet raw ground pixel resolution (flown at 3,165 feet above ground level). **Image coverage will extend 2,700 feet east of the coastline into the Atlantic, with coverage west of the coastline to include the dunes. We've been able to work out an orthophoto image tile layout that meets the coverage requirements.** Final imagery will be submitted at a final 0.5-foot ground resolution and will meet 1"=100' NMAS horizontal accuracy.
 - Specifications relating to 80% forward overlap don't apply because the push-broom sensor collects continuously. All orthophoto imagery is collected at nadir.

Kelly Ratchinsky
Countywide GIS Coordinator
February 28, 2011
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- Raw digital orthorectified imagery will be provided in images strips as collected. We may break the strips down into multiple segments if the file sizes are too large.
- For the Photo Mosaic Index, we will provide a map showing the image strips as collected. In MrSID format, we may wish to either increase the level of compression (1:100, for example) or break the area into multiple MrSID files to keep file sizes manageable.
- The Statistical Validation Report listed as one of the deliverables is not described within the specifications. If this report is required, if you would please provide the requirements, I'll verify whether it applies to our imagery acquisition.

A few more clarifications that don't necessarily apply to imagery acquisition:

- I'm assuming the Spot Index Map is a layout showing the outlines of each orthophoto image - an orthophoto tile index, if you will.
- I didn't see a reference to Digital Plot Files in the list of deliverables, so that is not included in our fee estimate.
- For the Control & Targeting, we're not planning to re-target any points (there are five points within the vicinity from our 2009 orthophoto project with you), but can measure the locations of those targets as they show on the 2009 imagery and determine those locations on the new imagery. Also, we agree that we can determine photo control locations from the triangulated stereo imagery from our 2009 flights.

Fee Estimate - 0.33 feet raw ground pixel resolution, flown at 3,165 feet AGL

• Imagery Acquisition and Processing	\$ 37,682.00
• Film scanning	Not Applicable
• Ground control survey & targeting; Airborne GPS Survey	Not Applicable
• Aerial Triangulation	\$ 9,199.00
• Orthophoto Mapping	\$ <u>28,852.00</u>
• GRAND TOTAL	\$ 75,733.00

Orthophoto imagery will meet the following specifications:

Publication scale: 1"=100'
Pixel Resolution: ½ foot
Photo type: Natural Color
Horizontal Accuracy: +/-3.33' at 90 Percent
Imaging Sensor: ADS80 Digital Imaging Sensor

Kelly Ratchinsky
Countywide GIS Coordinator
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Thank you, again, for the opportunity to propose on the project. We look forward to your response and to working with you again.

Sincerely,

Woolpert, Inc.



Richard R. Hudson, PE, PSM
Senior Associate

EXHIBIT B

Palm Beach County, FL Coastal Mapping Project

MAY, 2011 - FLIGHT OPPORTUNITY WINDOW

Tide Station Reference = Palm Beach

Date	Tide Window				Sun Angle Window		Optimal Photography Window			Date
	Low Tide (EDT)	High Tide (EDT)	2 hrs after low tide (EDT)	1 hr after high tide (EDT)	Begin 15° (EDT)	End 35° (EDT)	open	close	hours:minutes	
01-May-11	2:01	7:52	4:01	8:52	7:55	9:25	7:55	8:52	0:57	01-May-11
02-May-11	2:39	8:31	4:39	9:31	7:55	9:25	7:55	9:25	1:30	02-May-11
03-May-11	3:15	9:09	5:15	10:09	7:54	9:24	7:54	9:24	1:30	03-May-11
04-May-11	3:51	9:48	5:51	10:48	7:53	9:24	7:53	9:24	1:31	04-May-11
05-May-11	4:28	10:27	6:28	11:27	7:53	9:23	7:53	9:23	1:30	05-May-11
06-May-11	5:06	11:07	7:06	12:07	7:52	9:22	7:52	9:22	1:30	06-May-11
07-May-11	5:48	11:50	7:48	12:50	7:52	9:21	7:52	9:21	1:29	07-May-11
08-May-11	6:35	12:39	8:35	13:39	7:51	9:21	8:35	9:21	0:46	08-May-11
09-May-11	7:29	13:34	9:29	14:34	7:50	9:20	XX	XX	XX	09-May-11
10-May-11	8:30	14:36	10:30	15:36	7:50	9:20	XX	XX	XX	10-May-11
11-May-11	9:33	15:43	11:33	16:43	7:49	9:20	XX	XX	XX	11-May-11
12-May-11	10:36	16:50	12:36	17:50	7:49	9:19	XX	XX	XX	12-May-11
13-May-11	11:35	17:53	13:35	18:53	7:48	9:19	XX	XX	XX	13-May-11
14-May-11	0:07	6:07	2:07	7:07	7:48	9:18	XX	XX	XX	14-May-11
15-May-11	1:03	7:03	3:03	8:03	7:47	9:18	7:47	8:03	0:16	15-May-11
16-May-11	1:57	7:57	3:57	8:57	7:47	9:18	7:47	8:57	1:10	16-May-11
17-May-11	2:49	8:49	4:49	9:49	7:47	9:17	7:47	9:17	1:30	17-May-11
18-May-11	3:39	9:39	5:39	10:39	7:46	9:17	7:46	9:17	1:31	18-May-11
19-May-11	4:30	10:29	6:30	11:29	7:46	9:17	7:46	9:17	1:31	19-May-11
20-May-11	5:21	11:19	7:21	12:19	7:46	9:16	7:46	9:16	1:30	20-May-11
21-May-11	6:13	12:09	8:13	13:09	7:45	9:16	8:13	9:16	1:03	21-May-11
22-May-11	7:06	13:00	9:06	14:00	7:45	9:16	9:06	9:16	0:10	22-May-11
23-May-11	8:01	13:53	10:01	14:53	7:45	9:16	XX	XX	XX	23-May-11
24-May-11	8:57	14:48	10:57	15:48	7:44	9:16	XX	XX	XX	24-May-11
25-May-11	9:51	15:44	11:51	16:44	7:44	9:15	XX	XX	XX	25-May-11
26-May-11	10:42	16:40	12:42	17:40	7:44	9:15	XX	XX	XX	26-May-11
27-May-11	11:30	17:34	13:30	18:34	7:44	9:15	XX	XX	XX	27-May-11
28-May-11	12:15	18:24	14:15	19:24	7:44	9:15	XX	XX	XX	28-May-11
29-May-11	0:43	6:27	2:43	7:27	7:43	9:15	XX	XX	XX	29-May-11
30-May-11	1:26	7:13	3:26	8:13	7:43	9:15	7:43	8:13	0:30	30-May-11
31-May-11	2:07	7:57	4:07	8:57	7:43	9:15	7:43	8:57	1:14	31-May-11

May has	21:08	available hours of photography for the beach areas
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EXHIBIT B

Palm Beach County, FL Coastal Mapping Project

Sunday
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Tuesday

JUNE, 2011 - FLIGHT OPPORTUNITY WINDOW

Tide Station Reference = Palm Beach

Date	Tide Window				Sun Angle Window		Optimal Photography Window			Date
	Low Tide (EDT)	High Tide (EDT)	2 hrs after low tide (EDT)	1 hr after high tide (EDT)	Begin 15° (EDT)	End 35° (EDT)	open	close	hours:minutes	
01-Jun-11	2:46	8:41	4:46	9:41	7:43	9:15	7:43	9:15	1:32	01-Jun-11 Wednesday
02-Jun-11	3:26	9:24	5:26	10:24	7:43	9:15	7:43	9:15	1:32	02-Jun-11 Thursday
03-Jun-11	4:06	10:07	6:06	11:07	7:43	9:15	7:43	9:15	1:32	03-Jun-11 Friday
04-Jun-11	4:48	10:52	6:48	11:52	7:43	9:15	7:43	9:15	1:32	04-Jun-11 Saturday
05-Jun-11	5:33	11:39	7:33	12:39	7:43	9:15	7:43	9:15	1:32	05-Jun-11 Sunday
06-Jun-11	6:22	12:29	8:22	13:29	7:43	9:15	8:22	9:15	0:53	06-Jun-11 Monday
07-Jun-11	7:15	13:24	9:15	14:24	7:43	9:15	XX	XX	XX	07-Jun-11 Tuesday
08-Jun-11	8:12	14:23	10:12	15:23	7:43	9:15	XX	XX	XX	08-Jun-11 Wednesday
09-Jun-11	9:12	15:26	11:12	16:26	7:43	9:15	XX	XX	XX	09-Jun-11 Thursday
10-Jun-11	10:13	16:31	12:13	17:31	7:43	9:15	XX	XX	XX	10-Jun-11 Friday
11-Jun-11	11:13	17:35	13:13	18:35	7:43	9:15	XX	XX	XX	11-Jun-11 Saturday
12-Jun-11	12:11	18:35	14:11	19:35	7:43	9:15	XX	XX	XX	12-Jun-11 Sunday
13-Jun-11	0:44	6:42	2:44	7:42	7:43	9:15	XX	XX	XX	13-Jun-11 Monday
14-Jun-11	1:39	7:38	3:39	8:38	7:43	9:15	7:45	8:38	0:53	14-Jun-11 Tuesday
15-Jun-11	2:31	8:32	4:31	9:32	7:44	9:15	7:44	9:15	1:31	15-Jun-11 Wednesday
16-Jun-11	3:22	9:23	5:22	10:23	7:44	9:16	7:44	9:16	1:32	16-Jun-11 Thursday
17-Jun-11	4:12	10:11	6:12	11:11	7:44	9:16	7:44	9:16	1:32	17-Jun-11 Friday
18-Jun-11	5:00	10:58	7:00	11:58	7:44	9:16	7:44	9:16	1:32	18-Jun-11 Saturday
19-Jun-11	5:48	11:45	7:48	12:45	7:44	9:16	7:48	9:16	1:28	19-Jun-11 Sunday
20-Jun-11	6:36	12:31	8:36	13:31	7:44	9:16	8:36	9:16	0:40	20-Jun-11 Monday
21-Jun-11	7:24	13:17	9:24	14:17	7:45	9:17	XX	XX	XX	21-Jun-11 Tuesday
22-Jun-11	8:13	14:06	10:13	15:06	7:45	9:17	XX	XX	XX	22-Jun-11 Wednesday
23-Jun-11	9:02	14:57	11:02	15:57	7:45	9:17	XX	XX	XX	23-Jun-11 Thursday
24-Jun-11	9:53	15:51	11:53	16:51	7:45	9:17	XX	XX	XX	24-Jun-11 Friday
25-Jun-11	10:43	16:46	12:43	17:46	7:46	9:18	XX	XX	XX	25-Jun-11 Saturday
26-Jun-11	11:31	17:42	13:31	18:42	7:46	9:18	XX	XX	XX	26-Jun-11 Sunday
27-Jun-11	0:00	5:42	2:00	6:42	7:46	9:18	XX	XX	XX	27-Jun-11 Monday
28-Jun-11	0:48	6:35	2:48	7:35	7:46	9:18	XX	XX	XX	28-Jun-11 Tuesday
29-Jun-11	1:33	7:25	3:33	8:25	7:47	9:19	7:47	8:25	0:38	29-Jun-11 Wednesday
30-Jun-11	2:18	8:14	4:18	9:14	7:47	9:19	7:47	9:14	1:27	30-Jun-11 Thursday

June has	19:46	available hours of photography for the beach areas
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JULY, 2011 - FLIGHT OPPORTUNITY WINDOW

Tide Station Reference = Palm Beach

Date	Tide Window				Sun Angle Window		Optimal Photography Window			Date
	Low Tide (EDT)	High Tide (EDT)	2 hrs after low tide (EDT)	1 hr after high tide (EDT)	Begin 15° (EDT)	End 35° (EDT)	open	close	hours:minutes	
01-Jul-11	3:01	9:01	5:01	10:01	7:47	9:19	7:48	9:19	1:31	01-Jul-11 Friday
02-Jul-11	3:45	9:48	5:45	10:48	7:48	9:19	7:48	9:19	1:31	02-Jul-11 Saturday
03-Jul-11	4:29	10:36	6:29	11:36	7:48	9:20	7:48	9:20	1:32	03-Jul-11 Sunday
04-Jul-11	5:16	11:25	7:16	12:25	7:48	9:20	7:48	9:20	1:32	04-Jul-11 Monday
05-Jul-11	6:04	12:16	8:04	13:16	7:49	9:20	8:04	9:20	1:16	05-Jul-11 Tuesday
06-Jul-11	6:57	13:10	8:57	14:10	7:49	9:21	8:57	9:21	0:24	06-Jul-11 Wednesday
07-Jul-11	7:53	14:07	9:53	15:07	7:49	9:21	XX	XX	XX	07-Jul-11 Thursday
08-Jul-11	8:52	15:09	10:52	16:09	7:50	9:21	XX	XX	XX	08-Jul-11 Friday
09-Jul-11	9:54	16:13	11:54	17:13	7:50	9:22	XX	XX	XX	09-Jul-11 Saturday
10-Jul-11	10:56	17:19	12:56	18:19	7:50	9:22	XX	XX	XX	10-Jul-11 Sunday
11-Jul-11	11:55	18:21	13:55	19:21	7:51	9:22	XX	XX	XX	11-Jul-11 Monday
12-Jul-11	12:28	6:27	14:28	7:27	7:51	9:23	XX	XX	XX	12-Jul-11 Tuesday
13-Jul-11	1:24	7:24	3:24	8:24	7:52	9:23	7:52	8:24	0:32	13-Jul-11 Wednesday
14-Jul-11	2:16	8:17	4:16	9:17	7:52	9:23	7:52	9:17	1:25	14-Jul-11 Thursday
15-Jul-11	3:05	9:06	5:05	10:06	7:52	9:23	7:52	9:23	1:31	15-Jul-11 Friday
16-Jul-11	3:51	9:52	5:51	10:52	7:53	9:24	7:53	9:24	1:31	16-Jul-11 Saturday
17-Jul-11	4:35	10:35	6:35	11:35	7:53	9:24	7:53	9:24	1:31	17-Jul-11 Sunday
18-Jul-11	5:18	11:17	7:18	12:17	7:54	9:24	7:54	9:24	1:30	18-Jul-11 Monday
19-Jul-11	6:00	11:58	8:00	12:58	7:54	9:25	8:00	9:25	1:25	19-Jul-11 Tuesday
20-Jul-11	6:42	12:40	8:42	13:40	7:54	9:25	8:42	9:25	0:43	20-Jul-11 Wednesday
21-Jul-11	7:25	13:24	9:25	14:24	7:55	9:25	XX	XX	XX	21-Jul-11 Thursday
22-Jul-11	8:10	14:11	10:10	15:11	7:55	9:26	XX	XX	XX	22-Jul-11 Friday
23-Jul-11	8:59	15:03	10:59	16:03	7:56	9:26	XX	XX	XX	23-Jul-11 Saturday
24-Jul-11	9:52	16:00	11:52	17:00	7:56	9:26	XX	XX	XX	24-Jul-11 Sunday
25-Jul-11	10:46	17:01	12:46	18:01	7:56	9:27	XX	XX	XX	25-Jul-11 Monday
26-Jul-11	11:40	17:59	13:40	18:59	7:57	9:27	XX	XX	XX	26-Jul-11 Tuesday
27-Jul-11	0:11	6:00	2:11	7:00	7:57	9:27	XX	XX	XX	27-Jul-11 Wednesday
28-Jul-11	1:01	6:56	3:01	7:56	7:58	9:28	XX	XX	XX	28-Jul-11 Thursday
29-Jul-11	1:49	7:49	3:49	8:49	7:58	9:28	7:58	8:49	0:51	29-Jul-11 Friday
30-Jul-11	2:35	8:39	4:35	9:39	7:58	9:28	7:58	9:28	1:30	30-Jul-11 Saturday
31-Jul-11	3:21	9:29	5:21	10:29	7:59	9:29	7:59	9:29	1:30	31-Jul-11 Sunday

July has 21:45 available hours of photography for the beach areas

2011 TECHNICAL SPECIFICATIONS

ENVIRONMENTAL AERIAL PHOTOGRAPHY ACQUISITION FOR PALM BEACH COUNTY COASTS & INLETS

1. PURPOSE

Palm Beach County (PBC) intends to issue a contract to provide digital orthophotography in the coastal areas for the purposes of monitoring coastal erosion, performance of restoration projects, accretion in inlet shoals, and mapping and quantifying exposed rock and/or reef in nearshore waters. In order to ensure that the photographs meet the needs for these purposes, these technical specifications include criteria for physical conditions during the time of the photography (sun angle, tide stage, sea surface conditions, water clarity, and those conditions outlined in Paragraph 3 below), photographic equipment, horizontal and vertical control and aerotriangulation, orthorectification, and deliverables. The minimum acceptable criteria are as follows:

2. LOCATION AND COVERAGE

The area of coverage includes the entirety of the Palm Beach County coastline located in Palm Beach County, Florida, from the Martin County line to the Broward County Line. The coastal and nearshore coverage includes all inlets as follows:

- **Jupiter Inlet.** West to Alternate A1A
- **Lake Worth Inlet.** West to the Port of Palm Beach
- **South Lake Worth Inlet.** West to the Boynton boat ramp
- **Boca Raton Inlet.** West to Palmetto Park Road

The orthophotography deliverable for this project involves 92 tiles that cover 4,200' x 3,000' each at a map scale of 1"=100' (Exhibit A).

Coastal coverages, at a minimum, must match the imagery provided by prior contractors for 2007 and 2008 and will include no less than 2,000' from shore and land mass sufficient for aerial triangulation and orthorectification of the photographs. Relative to the flight conditions described in Paragraph 3 below, approximately 1/3 of the photo frame should be land mass and 2/3 ocean.

3. FLIGHT CONDITIONS

PBC requires that aerials be flown on a rising tide, at least 2 hours after low tide and no later than 1 hour after high tide to ensure clear water inside the inlets. Water clarity and sea state are the most important factors in obtaining the necessary image quality for evaluating the reefs in the nearshore waters. Calm seas and clear water are essential for acceptable images. Cloud cover, fog, smoke and other factors must be considered to ensure acceptance, and the sun angle must be between 15 degrees and 35 degrees.

The flight window of opportunity shall begin on May 1. The goal is to complete the flights before the rainy season, as once the rains begin it becomes increasingly difficult to schedule flights. The preferred months for flights are May through August when the seas are likely to be the calmest. Prior to flight, the contractor will provide PBC with a chart showing the calendar dates of flight opportunities that are favorable to the sun angle and tide constraints of the project (See Exhibit B). PBC and the contractor will then jointly monitor various Federal, State, and Local internet web sites for favorable weather, tide, and water clarity conditions immediately preceding those dates of flight opportunity. **PBC will provide the final on site assessment of**

the sea conditions and, in consultation with the contractor who will be monitoring the sky conditions, will provide the final authorization for the flight 24 hours prior to the anticipated flight.

PBC requires that photography capture will start on the north end of the County. The contractor will attempt to capture the entire coastline during each photo mission. Factors which may keep this from occurring would be acts of God, clouds below the aircraft, rain or high winds.

Logs shall be maintained and provided to PBC for the following:

- A. A flight log representing aircraft flight time shall be maintained on an hourly basis. The time of takeoff, start of photographs, end of photographs, and landing shall be recorded to the nearest of 0.1 of an hour.
- B. A daily weather log shall be maintained for each flight window to substantiate any delays due to inclement weather. The weather log shall include date, location, weather report, and weather forecast from the U.S. Weather Bureau. This information may be supplemented by direct observation.
- C. A tide log shall include the date, time, the location of the nearest NOAA tide station(s) being reported, and the tide elevation at the beginning, middle, and end of data collection as calculated for photo collection location (through interpolation between adjacent tide stations). All reported tide elevations shall be referenced to NAVD 1988.

4. SCOPE OF WORK

The contractor shall furnish all necessary materials, labor, supervision, equipment, and transportation necessary to execute and complete all work required by these specifications.

The scope of work includes new aerial photography and digital orthophotography. The contractor shall provide vertical color aerial photography, digital photo index maps, aerial triangulation, scanning, orthorectified digital images, and digital plot files. All requirements commonly included in comparable professional grade work are to be included in these specifications and all deliverables specified in Section 11 are required to complete the scope of work.

5. CONTROL & TARGETING

The contractor will incorporate the most recent aerotriangulation block, to be provided by PBC, in place of running its own control network. PBC will approve this method toward meeting the NMAS 1"=100' standards. The contractor will therefore repeat this process for this project.

Prior to the photography acquisition, the contractor may elect to repaint additional existing targets for additional statistical QC purposes.

No other control should be necessary to attain the specified accuracy requirements. Offshore control is not required.

6. AERIAL PHOTOGRAPHS

The images shall be furnished from new aerial photography flown specifically for this contract. Vertical aerial color photographs shall cover the areas specified in item 2 above. The aerial images shall be suitable for producing digital orthophotos at both 0.33-ft and 1.0-ft ground pixel resolution (GPR). The photography shall be flown at 1"= 600' (1:7200) nominal camera scale (NCS). **PBC shall approve all photography prior to**

orthorectification. The contractor will provide within two (2) weeks from completion of aerial flights the digital raw scanned imagery to PBC for this purpose.

A minimum of 80% forward overlap is required. The increase of forward overlap supports improved visibility through the water surface.

Tilt shall not exceed 5 degrees for any one photograph or 2 degrees for any 10 or more photographs in a line or one degree for the entire job. Crab shall not exceed 10 degrees as measured from the flight line, as indicated, by two or more consecutive photographs.

The contractor shall furnish aerial film of a quality that is equal or superior to Kodak color 2444 negative film. Only fresh, fine grain, dimensional, stable, and safety base aerial film shall be used. If digital photography is used in lieu of film, the same or better quality and resolution as the 2005 and 2007 aerial photographs must be provided.

The contractor shall scan the aerial photography at 14 microns (approximately 0.33-foot ground pixel resolution for the 1"=600' photography).

All images shall be clear and sharp in detail, fine-grained, uniform average density, average minimum contrast, free of clouds and cloud shadows, light streaks, smoke, static marks, fog, stains, or other blemishes which would render them unsuitable for their intended purpose. Light reflections from water areas shall be kept to the minimum when possible, consistent with wave action, use of filters, and time of photography and without extensive obscuration from ground shadow. If requested and if film is used, the negatives shall be uncut and furnished on spools and in suitable rigid containers or canisters. The outside of the containers shall be labeled with project name, date of photographic exposure numbers on the roll, and survey number.

Each exposure shall be numbered just within the exposed area, in consecutive order throughout the entire area, starting with exposure number one on roll number one and continuing the numbering in consecutive order through all rolls. The approximate time and scale of the photographs shall appear on the first and last exposure of each flight line, the month, day, and year shall appear on each exposure, just within the exposed area. The exposures shall show the date, scale of photography, project identification designator, survey number, roll number (R-1) and flight line number followed by the photo number as reading from left to right on each photograph.

A photo spot index map for the entire project will be provided to PBC. Each image position will be labeled with the image/sheet number and be provided in electronic format as ESRI shape files. In addition, the contractor will provide a digital photo mosaic index in MrSID format. This shall be delivered to PBC immediately upon completion of the aerotriangulation.

7. COORDINATE REFERENCE FRAME

Survey: Datum- NAD 83/90 (feet) - Horizontal
NAVD 88 - Vertical

8. AERIAL TRIANGULATION

The contractor will use the most recent aerotriangulation data to be provided by Palm Beach County. The purpose of this is to obtain as many tie points as possible to control the new photography to a block that already exceeds NMAS and thereby eliminate the need for new ground control.

PBC expects the aerial triangulation solution will support the required accuracy for this project (1"=100' NMAS). The contractor shall deliver a digital and bound copy of its aerial triangulation report to PBC.

9. DIGITAL ORTHOPHOTOGRAPHIC IMAGES (TIF and TFW)

The contractor shall prepare and deliver digital orthorectified color image files in TIF/TFW format.

- 9.1 Scanners.** The scanning of the aerial film shall be at 14 microns. PBC expects the imagery to be re-sampled up to the final output resolution (6" ground pixel resolution). Down sampling from the original scans to a finer resolution for output is not acceptable. The final file output for the images shall be TIF and TFW file format. (Sample TFW with metadata shown in Exhibit C).

Scanning will be performed at 12-bit resolution in order to enhance feature detail, with special emphasis on the subsurface areas.

- 9.2 Surface Model.** PBC will provide the surface model necessary for orthorectification. The contractor will be responsible for verifying the completeness and supplementing the collection, where required.

- 9.3 Image Processing.** In order to better reveal subsurface features, a gamma stretch shall be used. Color and tone will be defined and submitted to PBC for approval and that definition will be approved by PBC and used by the contractor for production of the remaining project. The final output will be at both a 0.33-ft GPR and 1.0-ft GPR.

- 9.4 Raw Orthorectified Imagery.** The contractor will provide the raw digital orthorectified imagery for each frame of photography. This will give PBC the opportunity to scrutinize image detail after it has been orthorectified, but before the images were mosaiced, cleaned up, color balanced, or feathered along cut lines. These will be at 0.33-ft GPR and delivered on DVDs or USB2 or firewire external hard drive with .tfw, .tif files. **This raw imagery is provided with a strict understanding that they will only be used for PBC's internal purposes and will not be made available to the general public.**

- 9.5 Image Mosaicing.** When two or more digital orthophoto chips are mosaiced, the chip judged by visual inspection to have the best contrast should be used as the reference image. The brightness value of the other chips shall be adjusted to match that of the reference chip. The join lines between the overlapping chips shall be chosen so as to minimize tonal variations. Localized adjustments of the brightness values shall be performed to minimize tonal differences between join areas. Sheets will end match precisely with adjacent sheets with no cover, a seamless mosaic digital image shall be created of the overall basin.

Every frame of the 80% forward overlap photography will be utilized for this project to ensure that most of the final orthophoto imagery will be as close as possible to nadir in the direction of flight. This will result in less building lean, less subsurface displacement from water refraction, and less surface reflection from sunlight.

- 9.6 MrSID Imagery.** The contractor shall produce three (3) MrSID files at 20x compression that match the tile layouts for the 1.0-ft GPR images.

10. QUALITY CONTROL

The contractor shall make every effort to minimize errors or defects in the final imagery. PBC will return comments to the contractor within fifteen (15) days of receipt of imagery. The contractor shall respond to PBC's comments or concerns within fifteen (15) days, either making necessary corrections or providing clarification.

11. DELIVERABLES

On completion of the service, all data required shall be delivered or mailed to PBC at the address shown in the contract and shall be accompanied by a properly numbered, dated and signed letter or shipping form listing the materials being transmitted. All costs of the deliverables shall be borne by the contractor. Items to be delivered include, but are not limited to, the following:

1. Original roll(s) of aerial film negatives, if film is used (To be stored by the contractor.)
2. One copy of the Aerial Triangulation Report in digital and hardcopy format. (Includes the current aerial camera calibration report.)
3. One copy of the Image Processing and Quality Control Report in digital and hardcopy format. (Includes the Flight and Film Inspection Report and Statistical Validation Report.)
4. One copy of the flight report signed by the pilot or the aerial photographer. The flight report shall contain the flight, tide, and weather logs as outlined in Section 3.
5. Raw digital orthorectified imagery provided on DVDs with .tfw, .tif files produced at 0.33-ft GPR before they were mosaiced, cleaned up, or color balanced. These are provided with a strict understanding that they will only be used for PBC's internal purposes and will not be made available to the general public.
6. 92 digital orthorectified tiles provided on DVDs or on a USB2 or firewire external hard drive with .tfw, .tif files produced at both 0.33-ft GPR and 1.0-ft GPR.
7. Digital imagery provided in MrSID format in 3 segments, and these 3 images will be created at 20x compression for the 1.0-ft GPR images.
8. Digital spot index map with all sheets numbered and referenced in .dwg and .shp format.
9. Digital photo mosaic index in MrSID format upon completion of the aerotriangulation.
10. Federally compliant metadata in electronic format for each deliverable in Item 6 above.
11. Updated DEM in uncompressed ArcINFO GENERATE if modified.

12. SCHEDULE

All deliverables will be sent to PBC ninety (90) days after completion of successful aerial photography. The contractor shall submit a schedule for this project in Microsoft Project format (Gantt Chart) within ten (10) days of receipt of the Task Order.



CERTIFICATE OF LIABILITY INSURANCE

OP ID SHCL
WOOLP-1

DATE (MM/DD/YYYY)
04/04/11

PRODUCER Nichols Rogers Knipper 533 E First St. Dayton OH 45402 Phone: 937-222-4666 Fax: 937-222-0103		THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.	
INSURED Woolpert Inc. 4454 Idea Center Blvd Dayton OH 45430-1500		INSURERS AFFORDING COVERAGE	NAIC #
		INSURER A: Westfield Ins Co	24112
		INSURER B: Commerce and Industry	19410
		INSURER C:	
		INSURER D:	
		INSURER E:	

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR ADD'LTR	INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS
A	X	GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Contractual Liab <input checked="" type="checkbox"/> XCU Included GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC	CMM5108246	12/31/10	12/31/11	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 \$ 300,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMPIOP AGG \$ 2,000,000
A		AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS	CMM5108246	12/31/10	12/31/11	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
		GARAGE LIABILITY <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT \$ OTHER THAN AUTO ONLY: EA ACC \$ AGG \$
		EXCESS / UMBRELLA LIABILITY <input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> DEDUCTIBLE RETENTION \$				EACH OCCURRENCE \$ AGGREGATE \$ \$ \$
B		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) <input type="checkbox"/> Y/N <input checked="" type="checkbox"/> N If yes, describe under SPECIAL PROVISIONS below	WC1610131 EXCL MONOPOLISTIC & CA	12/31/10	12/31/11	<input checked="" type="checkbox"/> VC STATUTORY LIMITS <input type="checkbox"/> OTHER EL EACH ACCIDENT \$ 1,000,000 EL DISEASE - EA EMPLOYEE \$ 1,000,000 EL DISEASE - POLICY LIMIT \$ 1,000,000
		OTHER				

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

Palm Beach County is additional insured for general liability as per written contract. All policies contain waiver of subrogation in favor of additional insured.

CERTIFICATE HOLDER

PALMB-3

Palm Beach County
 301 N. Olive Ave. 8th FL
 West Palm Beach FL 33401

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE
 WILLIAM J. HANCOCK, III
 [Signature]

CERTIFICATE OF INSURANCE

09-28-2010

Producer:
Ames & Gough, Inc.
8300 Greensboro Drive, Suite 980
McLean, VA 22102
(703) 827-2277

LEXINGTON
100 SUMMER STREET, BOSTON, MASSACHUSETTS 02110
ARCHITECTS/ENGINEERS PROFESSIONAL AND
POLLUTION INCIDENT LIABILITY

To: Palm Beach County
301 N. Olive Avenue, 8th Floor
West Palm Beach, FL 33401

As set forth below, the named insured has in force, on the date indicated, a policy of Architects/Engineers Professional And Pollution Incident Liability insurance with a limit of liability of not less than the amount indicated.

This certificate is issued as a matter of information only and confers no rights upon the holder. By its issuance, it does not alter, change, modify or extend the provisions of said policy and does not waive any rights thereunder.

Name of Insured:

WOOLPERT, INC.

Policy Period:

7/8/2010 TO 7/8/2011

Address of Insured:

**4454 IDEA CENTER BOULEVARD
DAYTON, OH 45430-1500**

Limit Of Liability - Per Claim:

\$1,000,000.00

Policy Number:

21456787

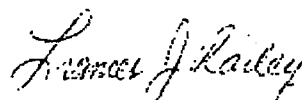
Limit of Liability - Annual Aggregate:

\$1,000,000.00

Insurance Company

LEXINGTON

AMES & GOUGH
INSURANCE/RISK MANAGEMENT, INC.



Frances J. Railey, CPCU

BUDGET AVAILABILITY STATEMENT

REQUEST DATE: 02/23/2011

REQUESTED BY: Janet Phipps

PHONE: 233-2513

PROJECT TITLE: Countywide Coastal Aerial Photography

LOCATION:

Project NO:

ORIGINAL CONTRACT AMOUNT:

BCC RESOLUTION#

REQUESTED AMOUNT: \$75,733.00

DATE:

CSA/LOA CHANGE ORDER AMOUNT:

CSA/LOA CHANGE ORDER NUMBER:

CONTRACTOR/CONSULTANT NAME: Woolpert, Inc.

PROVIDE A BRIEF STATEMENT OF THE SCOPE OF SERVICES TO BE PROVIDED BY THE CONSULTANT/CONTRACTOR: Provide digital orthophotography in the coastal areas as describe on the attached specifications.

BUDGET ACCOUNT NUMBER (IF KNOWN):

FUND	DEPT	UNIT	OBJ	PROG	PRD	AMOUNT	TSK	STSK	TSKO
3652	381	M040	3120	E040	CIP	\$3,155.54	S011	CCOC	014
3652	381	M045	3120	E045	CIP	\$1,162.57	S021	CJUC	014
3652	381	M045	3120	E045	CIP	\$1,162.57	S019	CJUC	014
3652	381	M028	3120	E028	CIP	\$4,318.11	S005	CJUB	014
3652	381	M037	3120	E037	CIP	\$3,155.54	S009	CSII	014
3652	381	M044	3120	E044	CIP	\$1,660.81	S013	CSPB	014
3652	381	M015	3120	E015	CIP	\$4,318.11	S001	COCR	014
3900	381	M700	3120	E700	CIP	\$4,152.03	S017	CSLW	014
3652	381	M041	3120	E041	CIP	\$5,148.52	S012	CDEB	014
3652	381	M039	3120	E039	CIP	\$2,657.30	S010	CBOR	014
3652	381	M051	3120	E051	CIP	\$2,325.14	S016	CBOR	014
3652	381	M016	3120	E016	CIP	\$1,992.97	S002	CBOR	014
3652	381	M034	3120	E034	CIP	\$20,926.22	S007	CPAB	014
3652	381	M100	3120	S102	M100	\$19,597.57	X007	CCTY	014

AD VALOREM

OTHER

FEDERAL

REVENUE:

ANTICIPATED DATE OF APPROVAL:

BAS APPROVED BY:

Big Rivers

DATE:

2/25/11

REQUIREMENT: Invoice must be approved by ERM before submitting to ISS for payment.