CITY OF FORT LAUDERDALE INTERNAL AUDIT OFFICE AUDIT REPORT

Review of Keith and Schnars, P.A.,
Professional General Civil Engineering
Design Consultant Services
Project 10377
Miami Road Area
Sanitary Sewer Improvements



AUDIT NO. 02/03-XX-11 DATED October 16, 2003

MEMORANDUM NO. 04-09

DATE: October 16, 2003

TO: Assistant City Manager/Greg Kisela

SUBJECT: Review of Keith & Schnars, P.A., Professional General Civil Engineering Design Consultant Services – Project 10377 – Miami Road Area Sanitary Sewer Design

Enclosed is a copy of the Final Report of Audit of the Review of Keith & Schnars, P.A., Professional General Civil Engineering Design Consultant Services – Project 10377 – Miami Road Area Sanitary Sewer Design.

Allyson C. Love Internal Audit Director

1 Attachment - Final Report of Audit

c: City Manager/Alan Silva Assistant City Manager/Bud Bentley Finance Director/Terry Sharp Water Works 2011 Program Manager/Paul Bohlander

ACL/cs

DATE: August 28, 2003

TO: Greg Kisela/Assistant City Manager

VIA: Internal Audit Director/Allyson C. Love

FROM: Assistant Director of Internal Audit/James Hamill/522-2604x52

SUBJECT: Review of Keith & Schnars, P.A., Professional General Civil Engineering Design Consultant Services - Project 10377 -Miami Road Area Sanitary Sewer Design

BACKGROUND

The City of Fort Lauderdale (herein "City") hired CH2M Hill, Inc. as the Program Manager to provide professional engineering services in the form of overall program management services in connection with the Water and Wastewater Master Plan Capital Improvement Program, Project No. 10365. CH2M Hill coordinates the design and construction services during the implementation of the program and assists the City in the process by establishing a master construction schedule, preparing monthly cash projections, monitoring monthly construction-related expenditures and providing coordination between active construction projects in neighborhood areas.

On March 15, 2001, the City entered into a continuing services agreement (Project #10281) with Keith & Schnars, P.A. ("herein Design Consultant") for professional general/civil engineering design consultant services. On August 21, 2001, the Design Consultant was awarded, under the continual service agreement, task order 16724.01 for \$224,061. The agreement was for survey, design and services during construction for the Miami Road area sanitary sewer improvements. This project was prioritized as part of the **Immediate** Water Works 2011 Action Plan. The following amendments/additional services agreements have been added to the original task order, as follows.

Amendment #	Date of Commission/ City Manager Approval	Scope	Amount
	6/19/01	Original Task Order	\$224,061.00
1	2/26/02	Replace 3600 linear feet of Undersized Water Main	17,420.00
2	3/29/02	Replace 1300 linear feet of 12" and 16" Water Main with 24".	7,820.00
3	4/30/03	Change Resident Project Representative Hours from Part Time to Full Time.	123,960.00
	10/31/02	Credit Adjustment - As Built Survey work	(9,635.00)
		Revised Total	\$363,626.00

As part of the Waterworks 2011 Program Management Team (PMT), the City designated an Assistant City Engineer to act as the City's Program Manager responsible for oversight of CH2M Hill.

SCOPE

The overall objective of our review was to determine if the Design Consultant complied in material respect with the provisions of task Order/Work Authorization 16724.01. Also, we evaluated CH2M Hill's effectiveness conducting management and administration over the work of the Design Consultant. The audit included a review of: payment requests to determine if they were appropriately documented/supported and milestones achieved; insurance policies to determine if they are current and meet contractual requirements; and minutes of progress meetings and daily reports to determine if they were timely prepared and contained information useful to program management.

We reviewed documents and transactions from August 2002 through April 2003 during the months of April and May 2003 according to generally accepted government auditing standards. This interim audit is part of Internal Audit's effort during the implementation of the Water Works 2011 Program to review certain selected task orders to verify compliance with contract provisions and the adequacy of the internal control environment. To this end, Internal Audit evaluated the effectiveness and efficiency of CH2M Hill's program management services.

OVERALL EVALUATION

The Design Consultant generally complied with the requirements of work authorization 16724.01. However, oversight provided by CH2M Hill could be strengthened. Invoices for services during construction were paid without supporting timesheets. Minutes from progress meetings were not timely prepared and follow through of significant action items was not evident in subsequent minutes. The information content of the daily reports could be improved to assist CH2M Hill's Construction Manager during the invoice review and approval process. Furthermore, contractual insurance requirements were not always satisfied.

FINDING 1

Internal audit was unable to validate whether \$41,836 of payments made to the Design Consultant were appropriate since timesheets were not provided to evidence hours actually worked for services during construction.

Continual service agreement, Article 7-Payment for Services states invoicing Design Consultant shall submit monthly invoices in the format and with supporting backup as required by the City. Backup shall include but not be limited to time sheets and receipts for indirect costs and expenses.

We noted the following invoices were not appropriately supported with time sheets.

Invoice Date	Invoice Number	Description	Amount
11/19/02	56109	Construction Phase	\$18,391.40
2/07/03	56957	Construction Services	23,445.00
		Total	\$41.836.40

CH2M Hill's Design Manager did not prior to authorizing payment, require the Design Consultant to submit timesheets to evidence hours actually worked and by whom.

Proper documentation to support time actually worked will provide the evidence needed to justify payments.

RECOMMENDATIONS AND MANAGEMENT COMMENTS

The City's Program Manager should require CH2M Hill's Manager of Finance and Controls to:

Recommendation 1. Obtain from the Design Consultant on all payments already processed, the applicable timesheets in order to support the amounts paid. A reconciliation should be accomplished to support the basis for payment.

Management Comment. Management concurred with the finding and recommendation and stated: "Of the \$41,836.40 deemed inappropriate, \$18,391.40 under invoice 56109 was paid under the lump sum portion of the original Keith & Schnars design contract. Therefore, we believe that timesheets are not required for SDC payments under invoice 56109. However, the \$23,445.00 paid under invoice 56957 falls under amendment #3 (upper limit sub-task) to the design contract and should require corresponding timesheets.

The PMT will obtain and reconcile the applicable consultant timesheets to the SDC invoices paid under amendment #3 of the Keith & Schnars task order." Estimated completion date December 1, 2003.

<u>Recommendation 2</u>. Require, prior to the authorization of all future payments for services during construction, that all invoices must have signed time sheets attached.

<u>Management Comment.</u> Management concurred with the finding and recommendation and stated: "The PMT will require that <u>all</u> upper limit/time & materials sub-task billings include timesheets for consultant employees working on these sub-tasks. This requirement will be added to the Internal Control Checklist as well as the Design Consultant Payment Process." Estimated completion date December 1, 2003.

FINDING 2

Design Consultant's invoices were not supported with objective proof of the achievement of various milestone deliverables making it difficult to ascertain the appropriateness of payments.

Internal Audit was able to validate that the following deliverables were received; however, time was expended to locate the actual hard copies of the documents.

- ✓ Engineering base map
- ✓ Design criteria report
- ✓ Order of magnitude quantity estimate
- ✓ Updated project schedule
- ✓ Engineering design permits
- ✓ Final construction plans

Based on discussion with the CH2M Hill's Design Manager, invoices are reviewed and approved based largely upon an assessment of the quality and completeness of the milestone design deliverables, not through review of select excerpts of the actual documentation.

Evidence to support payments will provide for a sufficient audit trail and will assure payments are justified.

RECOMMENDATION 3

The City's Program Manager should require the CH2M Hill's Project Design Manager to obtain from the Design Consultant excerpts of design deliverables to prove that the monthly invoices are accurate prior to the authorization of payment.

MANAGEMENT COMMENT

Management non-concurred with the finding and recommendation and stated: "It is the PMT's opinion that is not necessary for the Design Manager to expend further effort documenting whether excerpts of deliverables already received during the course of the design process are physically attached to an invoice. As the finding states, "invoices are reviewed and approved based largely on an assessment of the quality and completeness of the milestone deliverables."

The PMT believes that an excerpt attached to an invoice may not be an adequate representation of the <u>quality</u> or <u>completeness</u> of the deliverables.

A monthly status report detailing the work done during the invoice period is included with each invoice. This status report details progress on specific tasks and deliverables as well as the dates that deliverables were presented to the Design Manager during the period.

By authorizing payment of the invoice, the Design Manager is verifying its accuracy — and is also therefore verifying receipt of the deliverables indicated. In addition, Document Control keeps either the transmittal sheet (for the larger deliverables) or the deliverable itself in the PMT files." **This item is closed.**

FINDING 3

On site monitoring mechanisms used to track and monitor construction activity were not fully utilized to evidence project work status.

CH2M Hill Construction Management Manual Section 5.6.4 under Contract Administration, sub paragraph "Conduct Site Progress Meetings" states to ensure the project's quality, budget and schedule remain on track, the Program field inspection staff will conduct weekly progress meetings with the Contractor and other appropriate staff to review...and the Program field inspection staff will also conduct monthly progress meetings with the Contractor and other appropriate staff to review...For both of these meetings, field staff will prepare meeting minutes and distribute these to attendees for verification. The Construction Manager may attend weekly meetings and will attend monthly meetings.

Our review of CH2M Hill's Document Control System used to store construction documents revealed 8 of 23 (35%) meeting minutes were not in the system and in some cases where minutes were available, follow-through and resolution of significant actions taken were not documented (**Schedule**).

Document control does not have a procedure in place to follow-up on the receipt of completed minutes after weekly and monthly progress meetings are held and no procedure exists to document the resolution of action items.

Inadequate control/follow-up of significant issues increases the risk that items may go unresolved and prevent the realization of program goals/objectives.

RECOMMENDATIONS AND MANAGEMENT COMMENTS

The City's Program Manager should require CH2M Hill's Program Construction Manager to:

Recommendation 4. Initiate a written procedure whereby Document Control would follow up within 3 business days to confirm the completion and distribution of minutes from weekly and monthly progress meetings.

Management Comment. Management concurred with the finding and recommendation and stated: "It is the Construction Manager's responsibility to distribute meeting minutes to Document Control and to the meeting attendees. Document Control is not notified of scheduling and completion of monthly meetings.

The PMT will initiate a policy requirement in the Construction Manual requiring distribution of meeting minutes within 5 business days." **This item** is closed.

Recommendation 5. Provide in-house training about the purpose, format and content of minutes from progress meetings and emphasize the importance of proper follow through of significant action items.

Management Comment. Management concurred in principle with the finding and recommendation and stated: "The PMT will initiate a policy requirement emphasizing the importance of both following up on significant action items from previous meetings at the beginning of the following meeting and proper formatting and content of meeting minutes." This item is closed.

FINDING 4

Internal control procedures used to track construction activities were not adequate to readily determine/support whether amounts billed for work were actually completed and properly tested.

Daily reports provide a historical record of the daily events that take place on the job site.

Our review of the March Daily Reports revealed the following concerns.

- Twenty-one signed hard copies of the Daily Reports for March were not available in Document Control, three weeks after the end of the month. (*Accountability/Timeliness*)
- Testing/inspection activities are not always captured in Primavera¹ and those that default into the daily report are broad in scope and are not specific to a billable segment of work (See Exhibit). (Asset Accountability/Objectivity)
- Daily reports are <u>not</u> initialed by CH2M Hill's Construction Manager to provide evidence work performed was reviewed and faithfully represents the actual progress of the work. 2 out of 21 or 9.5% from a block sample for March 2003 reported incorrect field force labor details. (*Accountability*)

RECOMMENDATIONS AND MANAGEMENT COMMENTS

The City's Program Manager should require CH2M Hill's Program Construction Manager to:

Recommendation 6. Establish a specific timeline/written procedure for the submission of signed hard copies of the Daily Reports to Document Control. Additionally, via Expedition², Document Control should establish a procedure to initiate follow-up action when the Daily Reports are not timely filed.

Management Comment. Management concurred with the finding and recommendation and stated: "The PMT will institute policy requiring submittal of hardcopy daily reports within 5 business days. A flag will be set up electronically in the Expedition software as notification of passed deadlines for receiving the daily reports." This item is closed.

² Software used by CH2M Hill to track receipt and follow up of construction related communication and documentation.

¹ Scheduling software used by CH2M Hill and Contractors to show the proposed scheduling of the work for the Project.

Recommendation 7. Modify the template used for the Daily Report in Expedition to establish an activity coding system to identify specific testing activity/results, which will be useful in the evaluation of the accuracy of the progress draw. For example, See Exhibit, Activity ID A0ALLEY465, Test and Video could be refined to describe the project location, type of test and the particulars (size/depth) of the test.

Management Comment. Management concurred in principle with the finding and offered an alternative method to achieve the same objective: "The PMT believes that overall Internal Control is, in fact, adequate to readily determine/support whether amounts billed for work were actually completed and properly tested.

The PMT believes that it will be extremely difficult to tie in testing/inspection activities on Daily Reports in Expedition to specific billable segments of work on progress draws. The Daily Report (prepared by the RPR) is a log of the day's construction activity on the job and was not specifically designed to be used as an accounting tool.

Daily testing/inspection activities (reports) are not captured in the Primavera Program Construction scheduling software. The daily testing activities are captured within Expedition as an "as-built". There is not a link between the as-built schedule and the Program Construction schedule, nor is it possible to modify either software to do so.

The PMT believes that there are adequate compensating controls in place to validate the accuracy of the progress draws. These controls include the following:

- Construction Contracts are Lump Sum, Line Item based
- Retainage amounts held until full completion of Contract
- Final quantity calculations (to correct inaccuracies)
- □ The lag in amounts billed to the owner at any given time vs. the amount of unbilled construction activity performed by and <u>unbilled</u> by the contractor since the submittal date of the last progress draw.
- All construction progress draws are reviewed by the RPR, Design Consultant, Project Construction Manager, Program Construction Manager, Internal Control Analyst and City Program Manager before being submitted for payment.

We believe the amount of resources (re-formatting Daily Report forms/software improvements and increased work load for Resident Project Representatives (RPRs) in the field) needed to accomplish the recommendation would not achieve a corresponding benefit in Internal Control.

The PMT is currently in the process of developing alternate tools to assist in capturing test information in a more detailed and organized fashion. The PMT intends to implement these tools beginning with the Lauderdale Manors Phase 2 project and beyond." **Estimated completion date December 1, 2003.**

Recommendation 8. Establish a written procedure to require CH2M Hill's Construction Manager, prior to authorization of payments, to perform an in-depth review based on the test results captured electronically.

<u>Management Comment</u>. *Management concurred with the finding and recommendation and stated:* "CH2M Hill will have test results in hand prior to the authorization of payment. These results will not be captured electronically." **This item is closed.**

<u>Recommendation 9</u>. Initial Daily Report(s) to acknowledge the accuracy of the information contained in terms of the actual progress of the work.

Management Comment. Management concurred with the finding and recommendation and stated: "The PMT will institute policy requiring the Construction Manager to verify, electronically, in Expedition that he has reviewed Daily Reports. The PMT will also require that all Daily Reports not entered electronically into Expedition be signed by the responsible Construction Manager." Estimated completion date December 1, 2003.

FINDING 5

Insurance coverage was not sufficiently adequate to properly protect the City against all associated risk.

Continuing Services Agreement Article 10 paragraph C states the City must be included as an <u>additional insured</u> with respect to any claims arising out of this agreement.

Site-specific insurance should be required when services during construction (conducted in the field) are included as a contract deliverable.

The Certificates of Liability Insurance for the Design Consultant and its sub consultant, Accurate Locating, Inc., did not list the City as an additional insured and are not site specific.

Internal audit noted that the role of Design Consultant's Resident Project Representative is to observe the progress of the construction at the field site. This responsibility includes creation of daily reports, observation of crew activity and inspection and testing. Since this work is actually performed on site, then a site-specific provision should be part of the insurance requirement of the contract.

CH2M Hill's Construction and/or Design Manager did not reject the submitted certificates of insurance when it did not specifically list the City as additional insured and did not identify the project site.

Enforcement of insurance requirements will limit the City's liability exposure and provide assurance the City's assets are protected.

RECOMMENDATIONS AND MANAGEMENT COMMENTS

The City's Program Manager should require CH2M Hill's Construction Manager to:

Recommendation 10. Request the Design Consultant to obtain revised certificates of insurance, which specifically list the City as additional insured.

Management Comment. Management concurred with the finding and recommendation and stated: "The PMT will direct Keith & Schnars to modify their insurance certificates to list the City as an additional insured." Estimated completion date December 1, 2003.

The City's Program Manager should:

Recommendation 11. Initiate actions via City Attorney to consider incorporation of new insurance language for all future task orders or amendments that will require site-specific insurance when the scope of work includes fieldwork at various construction sites.

Management Comment. Management concurred with the finding and recommendation and stated: "The PMT and the City's Program Manager will initiate discussion with the City's Finance Director, City Attorney and Risk Management consultant to clarify the recommendations in this finding as well as other issues relating to Design Consultant and Construction contractor insurance coverage." Estimated date of completion December 1, 2003.

EVALUATION OF MANAGEMENT COMMENTS

Management comments provided and actions taken/and or planned are considered responsive to the recommendations with the exception of recommendation 3.

City of Fort Lauderdale - Internal Audit Office Miami Road Sewer Project #10377 Record of Weekly/Monthly Progress Meeting Minutes

					Not In		
Ref	Meeting			Monthly	Document		Follow-up on Significant
#	Date	Occurred	Cancelled	Meeting	Control	Remarks	Action Items
1	9/11/2002	х	-				
2	9/18/2002	х	-				
3	9/25/2002	х	-				
4		X	-	x			
5		X	-				
6	10/16/2002	X	-				
7	10/23/2002	X	-				
8	10/30/2002	X	-	x			а
9	11/6/2002	X	-				
10	11/13/2002	X	-				
11	11/20/2002	X	-				
12	11/27/2002	-	x			Thanksgiving	
13	12/4/2002	X	-	X			b
14	12/11/2002	X	-				
15		-	x				
16	12/25/2002	-	x			Christmas	
17	1/1/2003	-	X			New Years	
18	1/8/2003	X	-		x		
19	1/15/2003	X	-		x		
20	1/22/2003	X	-		x		
21	1/29/2003	X	-	x			b
22	2/5/2003	X	-		x		
23		-	x		x		
24		X	-		x		
25	2/26/2003	X	-	x			С
26		X	-		x		
27	3/12/2003	-	X				
28		X	-		x		
29		-	-	X	•	The monthly meeting	occurred on 3/26/03, however
30	4/3/2003	X	-				eting minutes haven't been
		23	6	6	8	prepared.	-
	Summary	#	%				
	Occurred	23	79.3%				
	Cancelled	6	20.7%				
		29	100.0%				

Legend:

- x = yes
- = no
- **a** = significant action item re: bacteriological testing first identified in the monthly minutes.
- **b** = above action item reiterated on subsequent monthly meetings.
- **c** = action item resolved; however, how resolution was achieved was not documented in the next monthly meeting minutes.

WATER SURKS 2

City of Fort Lauderdale Water and Wastewater CIP Fort Lauderdale, FL 33301 DAILY REPORT

No. P121

Phone: 954.522.2604

Fax: 954.522.7971

COMPANY:

REPORT PERIOD: Daily

DATE: 3/5/2003

DAY: Wednesday

PROJECT:

181201 - Miami Road Construction

JOB: CP10377

TEMPERATURE: 81-88

PRECIPITATION: None

SKY: Clear

WORK PERIOD: 8-600

ACTIVITY

Contractor: Astaldi Construction Subcontractor: none on site.

Crew #1 -- Crew began day by correcting reverse pitch in MAS 5, then moved to east end of SE 19th St. and began correcting problem of settling in MAS 18.

Crew #2 -- Water shut down began art 8:00 am, crew began tieing in water services to residences on SE 18th Ct. between Miami Rd. and Federal Highway. The following residences were tied in: Taco Bell, 704, 706, 710, 800/802, 705, 711, 713, 795, 804, 808, 801 and 814. The only services left are the tie in to Comfort Suites (irrigation) and stub out to vacant lot at NW corner of Miami Rd. and SE 18th Ct.

Crew #3 -- Crew not on site.

Crew #4 -- Crew spent day cleaning and grading SE 19th St. and SE 20th St., filling in pot holes and removing construction debris from swales.

ADDITIONAL COMMENTS:

Water samples taken (first day) at sample points 5 and 6 on SE 19th St.

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SCHEDULE		e ES	A	DF	À	PCT	OD	RD	TF	FF	.:
Activity ID	Title	,				0.00	0	0	0	0	
AOALLEY465	Test and video	3/5/2003		3/7/2003		100.00	3	0	. 6	. 0	
A0MAINN010	мот	9/4/2002		4/30/2003		88.00	160	44	0	0	
A0MAINN020	Well Point	9/6/2002	Ø	4/4/2003		95.00	215	26	0	. 0	
A0PROC0030	Mobilization	9/3/2002	Ø	4/4/2003		85.00	36	26	15	0	
AOREST-600	Road restoration from 17th to 19th Street	11/19/200	2 🗹	4/29/2003	0	25.00	• 19	32	1	1	
AOREST-620	Road restoration from 20th to State Road 84	10/21/200	2 🗹	4/30/2003		50.00	19	44	0)
	•										

Samisted By: Keith and Schnars, P.A.	Signed:	Date:	3/6/2003
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City of Fort Lauderdale Water and Wastewater CIP Fort Lauderdale, FL 33301

Phone: 954,522,2604

COMPANY:

PROJECT:

REPORT PERIOD: Daily

181201 - Miami Road Construction

DATE: 3/5/2003

DAY: Wednesday

JOB: CP10377

TEMPERATURE: 81-88

PRECIPITATION: None

SKY: Clear

WORK PERIOD: 8-600

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SCHEDULE					`					. (1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Activity ID	Title	ES	A		A	PCT	OD	RD 1		FF
AOREST-630	Project Completion	9/2/2002	Ø	4/30/2003		70.00	161	44	0	0,.
AOREST-640	Environmental Allowance	9/2/2002	Ø	4/4/2003		1.20	123	26	18	18
A0SE200170	Pressure test, chlorination and B.O. tes	t 2/28/2003		3/10/2003		0.00	7	7	8	. 2
A0SE24-580	Sanitary Manhole #31	3/5/2003		3/5/2003		0.00	· 1	1	1	0

EQUIPMENT Description	Source Units	Type	Work Area	Remarks
Cat	ACC 1	Trackhoe	330C	Inactive
Komatsu	1	Loader	WA320	9.0 hours
Bomag	1	Vibratory roller	IOT	Inactive
Pump	1	Vacuum pump	3*	1.5 hours
Cat	1	Trackhoe	308	8.0 hours
Cat	1	Combination	420D	6.0 hours
Bobcat	1			8.5 hours
Water Truck	1		1500 GAL	6.0 hours

FIELD FORCE LABOR

	-
Category	-

Source

Supv. Frmn. Jrny. Appr. Work Area

Field workers

ACC

Totals:

VISITORS

Time Company Visitor Name

None

Certified By:	Keith	and Sci	hnars.	P.A	١

3/6/2003

RESIDENT PROJECT REPRESENTATIVE'S SIGNATURE

WAI	R WORK	S PAR
, ,	2011	LINDERCOLLE

City of Fort Lauderdale Water and Wastewater CIP Fort Lauderdale, FL 33301

DAILY REPORT

No. P121

Phone: 954.522,2604

Fax: 954.522.7971

COMPANY:

REPORT PERIOD: Daily

DATE: 3/5/2003

DAY: Wednesday

PROJECT:

181201 - Miami Road Construction

JOB: CP10377

TEMPERATURE: 81-88

PRECIPITATION: None

SKY: Clear

WORK PERIOD: 8-600

ACTIVITY

MATERIALS DELIVERED

Material Name Time

Quantity Location

Ticket No.

Description

NONE

3/6/2003 Date: Certified By: Keith and Schnars, P.A. Signed: