REQUEST FOR PROPOSALS FOR SCADA PROPAGATION STUDY AND CONSULTING SERVICES RFP-RH-12-051

PROPOSALS TABULATION

NAME	Fishbeck, Thompson, Carr & Huber	Azure Solutions	Integral Blue, LLC	RCC Consultants, Inc.
ADDRESS	Grand Rapids MI	Rochester Hills MI	Madison Heights MI	Tallahassee FL
	J&K Communications, Inc.			
	Columbia City, IN			
Years in Business	FTC&H -56 yrs; J&K-36 yrs	10 years	2 years, 2 months	29 years
Years providing SCADA Propagation Studies and	FTC&H-over 30 yrs-exp w/ remote communica-	Since 2003 as a firm; personnel since 1980's.	Founded in 2010; staff has over 85 collective	Over 28 years completed SCADA projects from
consulting services - history	tions between sites utilzing phone lines, fiber,	Expert wireless solutions communications	years of wireless design & integration exp;	single RTU to over 3000 RTUs deployed
	cellular & licensed & unlicensed radios	field; land mobile radio and mobile data fields;	worked on various public entity projects that	
	J&K-since 1976.	LAN, fixed wireless technologis, broadband	include wireless engineering and integration	
	FTC&H and J&K successfully worked together	wireless; innovative and reliable active RFID		
	on projects in Michigan for NW Ottawa Water	solutions		
	System, St. Joseph, Alma & Wyoming			
Total personnel:				
Full Time Professional	FTC&H: 250 J&K: 0	4 Full Time Professional Employees	0 Full Time Professional Employees	112 Full Time Professional Employees
Full Time Non-Professional	FTC&H: 55 J&K: 32	3 Full Time Non Professional Employees	8 Full Time Non Professional Employees	18 Full Time Non Professional Employees
Part Time	FTC&H: 15 J&K: 3	4 Part Time Employees	1 Part Time Employee	0 Part Time Employees
Staff Profiles/Resources	FTC&H:	Scott Krakauer, exp in wireless since mid-1980	Steven Crain - Director of Engineering, Project	Kevin Lombardo, Ex Sponsor, Managing
	John Condie, PE, Project Manager, Principal, Sr	primarily municipal govts, large manufacturing	Manager, 2 yrs w/ IB, 19 with other firms;	Director, 23 yrs experience
	VP, 25 yrs experience	David Witek, 25 yrs data processing, 20 yrs	registered communication distribution	Chris Monzingo, PE, PMP, Sr Consultant
	Troy McDonald, Sr Eng, 22 yrs experience	networking	designer (RCDD) License	Lewis Phillips, Managing Consultant, 35+ yrs
	Richard Courtade, Electrical Eng, 8 yrs	Both exp designing variety of wireless com-	Charles Moore - Engineer, RF Design Engineer,	experience; wireless communications
	J&K Communications, Inc.:	munications networks & site surveys, conceptual	2 yrs w/ IB, 45 with other firms	
	Jon Shew, VP, 16 yrs	designs, computerized propagation applications,		
	Dan Simon, Sr RF Technician, 12 rs	field tests, reports and design documents		
Public Sector Clients	Ottawa County Road Commission-NW Ottawa	Independence Twp-design 900 MHz wireless	MDOT projects including wireless device inte-	South Florida Water Mgmt Dist, West Palm
	Water System-networking facilities, radios	system for SCADA	gration, structural design& system mgmt,	Beach, FL
	City of Alma-path testing, radios	Livonia-design/implement/support wireless	transportation upgrade projects	Seminole County Florida, Sanford, FL
	Wyoming-remote communications 50 sites	local & wide area networks	INDOT projects including design/build	Talquin Electric Cooperative, Quincy, FL
	path testing, radios, design	US Dept of Energy-Design/implement/support	replmt of wireless communications systems	
	Grand Haven, South Haven, St Joseph, Grand	wireless local area & mesh networks	Detroit DOT wireless ethernet connectivity	
	Rapids, Midland, Saline, Mackinac Island,	Trenton, Dearborn, Marquette, Howell, Monroe	between buildings	
	Marquette, Albion, Ionia, Owosso	County, W Bloomfield, US Dept of Treasury	PACE Transportion System-Chicago	
In-House Services; Special Qualifications or	Civil Engineering, Environmental, Architectural/	Wireless local area network services, fixed	Provide all RFP required services to include	Technology expertise for public sector, wire-
Specialty Areas	Engineering, Construction; Scada: electrical,	wireless services, implementation and	computer path profile development. RF link	less communications, specialized radio services,
	water & wastewater systems-FTC&H	support services. Experience w/ virtually	budget calculations and physical site survey	microwave radio eng, radio traffic monitoring,
	Install & maintain SCADA, radios, antenna	all wireless manufacturers' product line.	services to include bucket trucks and	radio propagation, radio frequency, spectrum &
	system installation, design, maintenance,	Development & introduction of SafeScene,	certified tower climbers	regulatory, antenna site planning & eng, integrity,
	physical propagation study	world's 1st automatic accountabilty system		bus & personal ethics, absence conflict of inter-
		for responders		est, compliance laws and regulations

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Inclusion of Collection of data from City Hall	Yes, team specializes in designing systems w/	Understood from addendum that is required.	Cost proposal does not include evaluating	Will include City Hall Facility in overall needs
	long-term goals in mind; adding sites may		the collection of data from City Hall facility	analysis
	result in additional costs		but could be considered as an extra service if	
			awarded the contract.	
Adding/Deleting Infrastructures including radio	Yes, report will specify recommendations	Will be investigated; anticipated that some	Does not include investigating additional	Yes, proposed conducting detailed needs
towers on any other public asset	for each site as determined by the in-field	additional infrastructure will be required in	height requirements at each location and	analysis & alternative solution process that
	path study	order to achieve reliable communications to	utilizing other City owned structures as	ensures City procures & implements most
		the sites in NE area of City	repeater locations	efficient, cost effective system to meet
				current and future communication needs.
Study scalable to include AMI system in future	Proposed licensed radios installed have	Dependent on requirements of the AMI	Not included in network analysis	Yes
	capability of transporting 2 independent	system & license ultimately obtained for		
	payloads of up to 9600 bps. If a higher	SCADA wireless system.		
	throughput product is desired, it will need to			
	be discussed prior to physical propagation			
	study			
Assumptions associated with study	Fire Stat 4 will be used as a repeater site;	City will provide access to all sites in timtely	Access to all locations and that traffic	Cannot make assumptions until a system
	might be able to utilize hospital (S Blvd &	manner, keys to fenced/locked sites or have	control will not be required	design is in place. Final system design will
	Dequindre) as a master/repeater location	personnel available to provide access in timely		greatly affect how study is ultimately
	Might be able to utilize hospital (S Blvd &	manner, traffic control assistance where		completed
	Dequindre) as possible repeater site	required		
Description of proposed testing and validation	Install transmitter & antenna system on one	Field testing using lift vehicles, bucket trucks or	Meet w/ City stakeholders review project scope,	A complete description of the proposed
process, description of types of equipment to	end of eachpath & receiver & antenna at	cranes to place antennas at predicted elevations	identify existing site locations, identify other	testing and validation process is not
facilitate field verification of RF Path Study	other end of each path-duplicate radiated	in computerized propagation analysis in close	potential repeater locations, define system	possible until the final system design is
	transmitter power, receiver sensitivity & antenna	proximity to mounting structure, full foliage,	reqs, Preliminary path profiles to minimize	completed
	system loss/gain; at actual height indicated.	test for minimum RSSI of -85 dBm; testing per-	number of required repeaters; Micropath's	
	Recommendations antenna systems, surge	formed w/ radios using 928.960 MHz spectrum &	Pathanal link analysis & path profiling software	
	protection, phy packaging, interface reqs, system	CalAmp Viper or GE/MDS SD series; will use	tool, determine new wireless & radio technology,	
	info, tech approach & radio hardware; provide	a variety of omnidirectional and directional	RF link budget analysis, physical path surveys,	
	120' aerial lift for test antenna to elevate to	antennas for testing.	photos, heights, sight, RF Spectrum analysis,	
	approx 70'		field radio tesings, report	
identify any clarifications specific to proposed	Based on computer models proposing 140'	During analysis additional sites or increases	No clarifications to include at this time	The need for new towers, revised repeater
sites	tower at service ctr; physical testing will include	in antenna heights beyond those detailed in		sites or new antenna heights will not be
	120' aerial lift at service ctr to elevate test	Add #1, communicated to City to identify new		known until a new system is designed and
	antenna. J&K lift capable of elevating the	suitable sites and acceptable antenna heights		propagation studies are completed
	remote antennas to 70'			

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Method of Approach/Work Plan Summary	FTC&H is proj mgr; J&K begins computer model-	Kick-off meeting; computerize propagation	Review project scope, prel path profiles each	Needs assessmt & recommend solution;
	ing on payload data needs to determine radios	analysis begins & analyzed; field verification	evaluated for direct connection to head-end,	System recommendations and report;
	used; physical testing; in field path testing	path studies using radios, antennas & RF jumpers	evaluated to FS4 or nearest location; use of	Radio frequency propagation field verification
	after computer models generated; propagation	to measure signal strengths at heights & loca-	software to develop new wireless topology	and report; develop procurement documents,
	testing 2 master sites, 2 tail-end link repeater	tions; reliable communications to all sites	that can be evaluated during physical path	proposal review and contract negotiations,
	sites & 35 remote sites; signal strength testing	validated; computerized propagation modeling	survey & field radio testing phase; Field site	Implementation support and system
	at min 4 heights.	& field signal strength testing, reports.	visits, coordinates, photos, heights, line of	acceptance testing
		Likely to require additional sites and additional	sight evals, RF Spectrum analysis, Field radio	
		antenna height at some existing sites	testing and written report	
Firm's technical capabiltiy and field radio survey	Testing and validation process: in field path testing	High level of technical ability; unparalleled exp	Utilize Micropath's Pathanal link analysis path	RCC has significant experience in conducting
approach	after computer models generated; install trans-	in tech & eng of wireless networks including	profiling software tool. Uses NED 1-second NAD83	field testing similar to what will be required
	mitter & antenna at new master/repeater loca-	design for cities, counties, etc. Approach to	elevation data & can display multiple K factors	in RH. RCC also has access to all the necessary
	tions; antennas located at or close to permanent	field radio surveys thorough, proven & time-	& Fresnel zones at various frequencies. New	tools and test equipment that will be
	location & height; radiated power carefully	tested; conservative, cognizant that radio links	wireless technologies created based on prel	required to complete the required field
	calibrated & adjusted for testing; site visited,	tend to degrade over time due to foliage growth,	path profile & then radio technology identified.	testing. RCC's approach to the field radio
	color photos, coordinates, site drawings &	wear on exposed antenna & cabling; thoroughly	Spectrum analyzer used with test antennas to	survey may depend on the outcome of the
	recommended installation methods; signal	analyze site conditions & paths between sites;	conduct analysis of proposed radio technology	system design phase of work
	strength tested in recommended antenna loca-	test signal strengths from heights that the	frequency range in licensed & unlicensed	
	tions a min 4 hgts; proposal based on 140' tower	computerized propagation modeling has indicated	frequencies, test at varying heights; throughput	
	located at Services 1 & 2 site.	sufficient signal strength & RSSI from location	or bit error rate test may be performed for	
		and heights	additional performance metrics	
Radio frequency propagation engineering analysis	RF Calculation examples provided	Longley-Rice radio propagation model;	Once new wireless topology determined then	RCC utilizes ComSite Design, its in-house
method		computerized propagation applications	SCADA radio technology can be identified &	wireless design toolset, for radio propagation
			used to conduct field signal strength testing.	studies and PathLoss 4 for the point-to-point
				path design
Baseline Schedule	Oct 9 kickoff mtg, computer models & testing	29 days	50 days	For Report: End of December; Entire
	Oct 10-26; meetings and reports Oct 26-			Project December, 2013.
	28-Nov			
Unique qualifications to serve RH	FTC&H MI based, full service eng firm 55 yrs;	Experience & expertise-high level expertise in	Successful propagation studies for MDOT,	Significant staff resources specializing in
	understand municipalities & unique communi-	design of 900 MHz wireless netowrks for SCADA	Macomb County Public Works, Detroit, etc.	needed skill sets; variety of experience and
	cation reqs bet sites; J&K expertise in design,	& wireless in general; solid understanding of	Exp w/ deployment & integration of wireless	qualifications; communications consulting &
	upgrading & installing SCADA systems in area	SCADA; integrator of wireless networks; RH	equipment; worked with different types of	engineering is all they do; project team suited
	35 yrs; full service partner w/ GE MDS	based firm; knowledge of City's topography;	radio topologies, technologies=very rounded	to unique needs of projects; capable of meeting
	Both firms history of successfully delivering	previously SCADA system services to City	in design, eng & deploying wireless systems;	any unexpected challenges that may arise
	solution for multiple municipal clients in MI		Located in Oakland County familiar with radio	
			technologies of other agencies in area	

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Outside Firms	FTC&H has successfully worked with J&K	Occasionally utilize All American Cabling and	Frequency coordinator as Comsearch; sometimes	None
	Communications on multiple projects	Structured Cabling Systems	subcontract bucket truck and driver from a	
			fully licensed electrical contractor	
Methods of Communication w/ clients	Project mgr provides overall project direction &	Kick off meeting critical to establishing good	Single pt of contact=project mgr; kick-off mtg,	Communicates directly with client for face to
	is primary contact for clients; mutual communi-	communications; meetings, phone calls, email	wkly progress mtgs, biwkly schedule updates,	face mtgs and remotely via telephone, emails,
	cation results to successful projects; QA/QC	communications.	eng design review mtgs	teleconferences. Ability to set up an ftp server
	rigorous reviews			for secure transfer of large documents
Litigation	Information provided	Information provided	Information provided	Information provided
Insurance Requirements	Yes	Yes	Yes	Yes
Method of Payment	ACH	Credit Card	ACH	Credit Card
Cost Summary:				
Lump Sum Fee	**$44,854.00**	**$62,775.00**	**$94,300.00**	**$45,670.00**
Units Costs: Hourly Rates	FTC&H:			
	Principal, Sr Assoc, Assoc $115-$193	Engineer $160	Project Manager $95.55	Per Site/Per Path Field Verification Costs:
	Eng/Proj Mgr $53-$185	Non-Engineer $100	RF Design Engineer $92.92	1-10 $3,576 each
	Eng Specialist, Proj Super, Survey $71-$141		Field Technician $77.63	11-20 $3,287 each
	Technician $40-$151		Bucket Truck w/ Operator $1,150 per day	21-30 $2,800 each
	Production Support $64			30-40 $2,673 each
	J&K:			*Hourly Rate (Labor Only) $170
	Service Tech $100			
	Service Tech OT $150			Tasks 1-3:
	Admin Fees $80			1-Needs Assessmt & Recom Solution $22,230
				2-System Recom and Report $ 5,560
				3-Five site radio frequency field
Exceptions/Alternates	Defined within proposal letter & vendor	None	N/A	verification $17,880
	questionnaire			**Total Tasks 1-3 $45,670**
				Optional Tasks:
				3A-Additional five field radio frequency
				verification, if needed $17,880
				4-Procure Docs, Proposal Review &
				Contract Negotiations $29,680
				5-Implementation Support & testing $27,385
				Total Alternate Tasks $74,945