

Estimated Percent Complete of Currently Scoped GIS Projects

	Tasks to Complete	Percent Complete
730396	Developed CSSA GIS	100%
	Uploaded previously recorded data*	100%
	Translated AutoCAD maps into GIS format	100%
	Incorporated B-20 sample locations into GIS*	100%
	Purchased GIS and database software for CSSA	100%
	Installed software, GIS data, and database onto CSSA workstation	100%
	Designed database structure in accordance with TSSDS	100%
	Built queries	100%
	Developed other reporting forms not included in TSSDS	100%
	Programmed periodic reminders of TNRCC-reporting deadlines into database	100%
	Uploaded chemical analysis data into database *	100%
	Scanned and linked geologic cross-sections, Piper diagrams into GIS	100%
	Developed GIS manual	100%
	Trained CSSA personnel on GIS	100%
732345	Develop aerial map using using a qualified aerial mapping service	100%
	Include new aerial map into GIS	100%
	Translate RL53 maps into GIS format	100%
	GIS input of Bldg 43 Sampling Information	95%
	GIS input of SWMU B-9 Sampling Information	95%
	GIS input of SWMU B-10 Sampling Information	50%
	GIS input of SWMU B-11 Sampling Information	95%
	GIS input of SWMU I-1 Sampling Information	85%
734521	GIS input of SWMU O-1 Sampling Information	75%
	Create hyperlinked encyclopedia	60%
	Develop VB application to link CSSA database through browser	25%
	Develop SDS to allow access to GIS through browser	0%
	Purchase and provide five copies of ArcView software	100%
736071	Enhance GIS images and database with infrastructure information	5%
	GIS input of SWMU B-4 Sampling Information	75%
	GIS input of SWMU B-15/16 Sampling Information	75%
	GIS input of SWMU B-23 Sampling Information	75%
	GIS input of SWMU B-23A Sampling Information	0%
	GIS input of AOC 47 Sampling Information	75%
	GIS input of AOC 48 Sampling Information	75%
	GIS input of AOC 56 Sampling Information	75%
	GIS input of AOC 58 Sampling Information	75%
	GIS input of AOC 61 Sampling Information	75%
	Enter land use data and derive sensitive receptor point locations	100%
	Develop land use map	100%
	Update NPDES database	25%
	Create air pollution emission database application	10%
	Provide database LAN administration support	50%
	Download Digital Elevation Model and correct from ortho images	100%
	Use DEM to calculate watershed locations	100%
	Update hyperlinked encyclopedia	0%
	Create graphical user interfaces for confined spaces, air permits, & haz waste	0%
736625	Work Plan Updates	100%
	AOCs 37, 41, and 66 Soil Gas Results	70%
	AOCs 35, 42, 43 and SWMU B-9 Geophysical Surveys	60%
	AOCs 36, 38, 39, and 40 Surface Sampling	75%
	AOCs 35, 39, and 43 Surface Sampling	0%
	AOC 42 Surface/Subsurface Sampling	0%
	AOC 50 Remediation	0%

\* Uploading of ITS-replacement data is being done at no cost to CSSA.

Review of Budgeted vs. Expended Costs Associated with the GIS

	Budgeted			Expended		
	Labor Cost (w/o fee)	ODCs	Total	Labor Cost (w/o fee)	ODCs	Total
730396	\$ 111,855.00	\$ 7,914.40	\$119,769.40	\$ 111,855.00	\$ 7,914.40	\$ 119,769.40
732345	\$ 16,358.00	\$ 3,766.00	\$ 20,124.00	\$ 16,173.00	\$ 4,034.00	\$ 20,207.00
734521	\$ 93,697.28	\$ 32,210.00	\$125,907.28	\$ 72,081.00	\$26,571.00	\$ 98,652.00
736071	\$ 131,029.00	\$ 15,387.00	\$146,416.00	\$ 45,661.00	\$ 2,421.00	\$ 48,082.00
736625	\$ 21,700.80	\$ 1,025.00	\$ 22,725.80	\$ 8,151.13	\$ 319.49	\$ 8,470.62
<b>Totals:</b>			<b>\$434,942.48</b>			<b>\$ 295,181.02</b>

CSSA GIS TASKS  
Scope of Work Items  
AMC Contract

Job No.	SOW or TIM ID	SOW or TIM Item Description	Parsons ES Assumptions or Action Item(s)	Parsons ES Modified or Updated Assumptions	Parsons ES Cost Assumptions	Percent Complete	Comments
<b>Government RFP SOWs' and Parsons ES Proposals</b>							
730396 (RL33)	RFP 9/12/96 4.1.2	GIS Installation					
	4.1.2.1	<u>Facility Map Corrections</u> Incorporate existing digitized base maps	Update No.1 9/27/96  Existing digitized base maps will be used. These maps have not been surveyed to 100 percent accuracy at ground level and is estimated to be between 85 and 90%.	Modification 1 2/28/97  Current digitized maps for CSSA are in AutoCAD format. Maps will be translated to GIS software, then linked to locations in the CSSA database using ArcView. The percent accuracy is not known but is considered sufficient for the facility's purposes. As locations are surveyed for the B-20 project (and other projects), the survey data will be incorporated into the GIS and base maps will be corrected as needed.		100%	
		Convert coordinates in state plane to UTM coordinates. Show location of all existing surface features, including fencelines, center lines of creeks, buildings, paved and unpaved roads, soil borings, wells, and dense areas of vegetation. Provide corrected base map in paper copies and electronic CADD files (CDRLA002)	Coordinates in state plan will be converted to UTM coordinates			100%	
	4.1.2.2	<u>Software Purchase, Installation, and Optimization</u> Purchase GIS and compatible map contouring software.	Estimate assumes software used for GIS will be Access version 7.0 and ArcView version 3.0. ArcView will be purchase as part of this order. The standardized format, Triservices Spatial Data Systems (TSSDS), will be followed during database and GIS development. Developing a GIS with these standards requires a rigorous effort using a complex system	The appropriate GIS and database software will be purchased for CSSA by Parsons ES and installed by a GIS Specialist. The software and data will be optimized in accordance with the specification of the Air Force Quality Assurance Evaluator.		100%	
	4.1.2.3	<u>Database Development</u> Build electronic database that will be linked to GIS to allow retrieval of information in user-friendly format. Database software shall be provided by the Airforce	Access version 7.0 will be furnished by the Air Force.	A database structure will be designed in accordance with TSSDS to enable database retrieval and linking for CSSA's needs. Predefined queries will be built to extract the information desired by CSSA users.		100%	
	4.1.2.3.1	<u>Reporting forms</u> Use of the new TNRCC Access-generated discharge reporting forms if approved	The new TNRCC Access-generated discharge reporting forms will be used if approved by the TNRCC.	Where available, electronic forms developed by the TNRCC will be used as the reporting forms in conjunction with the GIS. Other reporting forms will be developed in the database, or database-compatible software.		100%	TNRCC approved forms
	4.1.2.3.2	<u>Flags</u> Provide automatic flagging functions for periodic reporting requirement reminders		Automatic periodic reminders (Flags) of the TNRCC-reporting deadlines (impending and missed) will be programmed into the database.		0%	No server during active phase of project. Needs to be completed
	4.1.2.3.3	<u>Geologic Cross Sections</u> Link geologic cross-section line locations and piper diagrams to GIS as an "image".	Geologic cross-section in locations and piper diagrams will be linked will be linked as an "image" because the GIS recognizes data only in plan view, not in three-dimensions.	Chemical analysis data in Excel or Lotus format will be uploaded to an Access database to be manipulated by the GIS software. A program will be written in GTGS to translate geophysical data and soil boring logs to a comma-delimited ASCII file that will be imported into the database.		100%	
	4.1.2.3.4	<u>Electronic Data Loading and Conversion</u> Convert all existing CSSA data into GIS format. Data shall be supplied to the contractor in the form of electronic spreadsheet files or electronic CADD files. The data shall consist of Army IRP projects, compliance projects that have been completed.	Data are only imported into database, therefore, there will be no validation of data input. After data incorporation the quality will be checked by comparing hard copies.	A GIS will be developed using previously recorded data from seven different CSSA environmental projects (NPDES permit, Air permit, SWMU investigation, B-20, B-3, Oxidation pond, and groundwater investigation).		100%	
	4.3.2.1	<u>Training</u> Provide training on the use of GIS for CSSA employees. The contractor shall conduct training only after it has completed all GIS implementation activities and teach end-user to produce environmental property condition maps and perform other operations with the GIS	GIS training of CSSA personnel will not exceed five persons and will not exceed 2 days.	Training will focus on an overview of how to use a GIS and how to use the GIS A user friendly GIS manual which uses CSSA environmental maps and data as examples will be developed.	Estimate also includes ArcView training (total of 20 hours ) for project personnel.	100%	
	6.2.2	Provide GIS Training Manual	3 copies of the draft GIS manual (CDRL A004) will be submitted to both CSSA and AFCEE/ERD. 6 copies of the final will be submitted to CSSA and 3 copies to AFCEE/ERD.			100%	TSSDS electronic manual use regarding GIS setup and maintenance



CSSA GIS TASKS  
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736071(R L83)	6.2.14	<u>GIS Enhancements and Database Updates</u>						
		Provide enhancements for the GIS currently in use at CSSA and update the database in accordance with the requirements in sec. 4.2.6 of this SOW	Building information (approximately 200 onsite) will include building attributes (date erected, ID number, use), height, and interior and/or exterior measurements. Interior measurements must be field collected. The following buildings will have only exterior measurements collected and entered into the GIS: 1, 38, 44, 45, 91, 92, 93, 94, 96, 98, 200 and 201. (However, the stack information for Building 200 will be collected). Buildings that contain spill equipment, hazardous waste generation, air permitted activities, pharmaceutical activities, and ASTs will have interior measurements collected. A partial list of these buildings include Buildings 4, 5, 30, 40, 86, 90, 93 and the paint booth.		Parsons ES assumes 4 hours per well, lithology, well completion information, survey information, and 2 hours per shallow boring to be entered into the GIS. Parsons ES assumes 24 borings and 6 wells.	0%	COE to provide electronic file for incorporation into CSSA GIS.	
			Storm sewer system includes watershed location, culverts, stormwater drains and pipes, and channels. All data will be provided by CSSA, and no field measurements will be necessary.			0%	COE to provide electronic file for incorporation into CSSA GIS.	
			Potable water system is assumed to include locations and attributes of drinking water pipes, hydrants, sprinklers, tanks, wells, and pumps. All data will be provided by CSSA, and no field measurements will be necessary.			0%	COE to provide electronic file for incorporation into CSSA GIS.	
			Electrical and telephone system includes power poles, power lines, backup generators, and telephone poles and lines. All data will be provided by CSSA, and no field measurements will be necessary.			0%	COE to provide electronic file for incorporation into CSSA GIS.	
			CSSA's GPS unit will be used for all field measurements; however, Parsons ES will provide training, information and a format for data collection regarding what is needed for each of the attributes and the GIS database. Parsons ES assumes that a training meeting will be necessary before collecting data for the buildings, storm sewer system, potable water system, and electrical/telephone systems. Parsons ES will create forms for CSSA use in collecting data needed for the GIS database. It is assumed that the accuracy of the location data is dependent upon the accuracy of the GPS measurements.			0%	Task provided to COE for completion	
			CSSA will manually draw locations of roads and creeks on zoomed-in maps provided by Parsons ES, and will provide attributes (such as paved, gravel, etc.). Parsons ES will digitize these maps for inclusion in CSSA's GIS.			0%	COE to provide electronic file for incorporation into CSSA GIS.	
			Parsons ES will download Digital Elevation Model (DEM) from USGS, correct the DEM from ortho images, and use it to calculate watershed locations at CSSA.			100%		
			As per conversation with Brian Murphy and Shavonne Gordon on May 19, 1999, CSSA has decided against developing a web site at this time. Instead, CSSA would like to develop a VB application for use on the CSSA LAN.					Removal of Web development efforts.
			NPDES database will be updated. Enhancements will include modifications to meet TPDES requirements, as well as to increase ease of use.				25%	
			Air pollution emission application will be developed for calculating air pollutant emission and comparing to permit limits. Parsons ES assumes that material use at each emission source will be logged by CSSA. This usage and the chemical composition of the materials will be used to calculate chemical emissions. Parsons also assumes that CSSA has chemical composition information for all chemicals being logged.				50%	
			Visual Basic/GIS application will be developed for use on the CSSA LAN. Parsons assumes that the CSSA LAN will have access to the TSSDS database and GIS. The VB/GIS application will have queries developed to CSSA specifications.				0%	
			All labeling conventions will agree with the labeling/categorization that is used in the Order.					
			A GUI will be created for each of these topics in both the GIS and the hyperlinked electronic application: confined spaces, air permits and hazardous waste. Each of these GUIs will lead the user through information regarding these topics. The GUIs for the GIS system will be created using ArcView and Avenue Developing Language.				0%	
		The land-use map for the CSM (Task 6) activities will be developed electronically utilizing the 1:18000 Tobin aerial photographs from May 5, 1998. The land use/land cover classification system used shall be the USGS Anderson classification system. The level of classification shall be level II. The classification attributes will be incorporated into the GIS database and will include detailed descriptions of classification numerology. Sensitive receptor point locations will be available for use within the GIS for air, water, human health and ecological conceptual models.				100%		

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<b>Meeting Minutes Regarding GIS</b>							
730396 (RL33)	<b>Kickoff Meeting 9/06/96</b>	Teresa asked Brian Murphy to prioritize input information.	Tasks were prioritized by Brian Murphy.			100%	Brian Murphy prioritized.
		Parsons ES indicated that the TSSDS would be used for the GIS standards. Parsons ES noted issues regarding analytical data integration.	Future analytical data should be received in a specific electronic format so that it can be easily imported into the GIS. Jo Jean Mullen suggested that Parsons ES look into ERPIMS-type database that USCOE is developing.			Not Applicable	
	<b>TIM #1 2/13/97</b>	Brian Murphy requested information concerning recommendations of hardware requirements for using the GIS system.	Continue GIS data preparation and database design, start GIS "roadmap."			100%	
	<b>TIM #2 4/15/98</b>	Brian would like to add reminder flags to geographic information system (GIS) for monthly bacteriological (BACT) sampling. Provide CSSA's GIS to EPA and TNRCC	Instruct GIS team to put BACT reminder flags into GIS. Look into providing CSSA GIS and ArcView on CD to EPA.			0%	
						0%	Not accepted by regulators.
734521 (RL74)	<b>TIM #1 3/11/99</b>	Brian asked if CSSA should continue to use Microsoft Access for their database, or if they should switch to Microsoft SQL Server. David answered that Access can handle a lot of data, but has trouble handling a lot of tables (and TSSDS has hundreds of tables). David indicated that if CSSA sticks with Access, many of the tables that aren't being used, and that CSSA will probably never use, can be trimmed off. Brian requested that David prepare an estimate for what it would cost to migrate from Access to SQL Server.	Parsons ES responded to request and transferred data from Access to Microsoft SQL server. The software was purchased by the government.			100%	Work efforts were completed on DO RL83
	<b>TIM #3 8/10/99</b>	Provide updates to GIS with groundwater data and have the groundwater modeling programs tailored to allow interfacing with CSSA's GIS. An emphasis on good graphical presentation of data and easy interfacing with CSSA's GIS system.				0%	
	<b>TIM #4 9/05/2000</b>	The current GIS system requires Parsons ES to redefine task objects to visual basics to meet the requirements of the expected new software.				0%	
						0%	
736071 (RL83)	<b>Kickoff Meeting 6/30/99</b>	Brian Murphy indicated that he would like to remove the Web site from RL74 scope and replace it with preparation of a graphical user interface using Visual Basic to access the database.				100%	
		Parsons ES will create some forms for collecting building data, stormwater data, etc. to make that data collection easier for CSSA personnel.				50%	
	<b>TIM # 3 7/26/2000</b>	Provide Access version of GIS database and all ArcView shape files on a CD to Tom Griffith (AFCEE) at the end of the meeting. Provide Jo Jean Mullen with live access to CSSA's GIS system.				100%	
		Evaluated Petro View for potential applicability to CSSA's GIS.				0%	