



DATE: October 15, 2002

TO: Mike Norris, Acting Chief, OSW
Steve Sorenson, Assistant Chief, OWQ
Katherine Lins, Acting Chief, OI
Susan Trapanese, Chief, NWIS

FROM: John Gray, Sediment Specialist, OSW

SUBJECT: **FY03 GCLAS SUPPORT NEEDS FROM TECH OFFICES**

This memorandum provides an update on the funding needs and progress related to the Graphical Constituent Loading Analysis System (GCLAS). It is specific to those obligations identified for support by the OSW and OWQ in that it addresses training, user support, and documentation development. I calculate that the **FY03 contribution** from the **OSW** to be **\$10.75K**, and the **OWQ contribution** to be **\$16.25K** (see page 2).

This memorandum does not address software support – an obligation of the OI, based on an August 31, 2001, agreement – which has become a substantial concern with the anticipated non-renewal of GCLAS software engineer Shiva Chen's contract in February 2003 (one suggested option is to develop a contract for part-time software support with original GCLAS software engineer Tom McKallip). It also does not address the need for formal inclusion of GCLAS into the NWIS. The intentions of the OI/NWIS in this regard are solicited, as is participation in a February 2003 GCLAS meeting as described below...

A ½-day meeting of the GCLAS team (Koltun, Gray, Glysson, Chen, representatives from OI and NWIS, and possibly McKallip by phone) to include Joe Nielsen is proposed before Shiva's contract expires. The meeting target date is February 4, 2003, in Reston; Feb. 5-6 may also work. Confirmation is sought from prospective meeting attendees.

FY02 FUNDING AND PROGRESS SUMMARY

Here is the breakdown of funds provided to Greg Koltun (Ohio District) in FY02:

OSW	\$14.3K
OWQ	\$ 8.8K
OI	<u>\$ 0K*</u>
	\$23.1K

* Reportedly, \$70K of "DIS Cost Recovery" funds went toward the contract with Orkand for Shiva Chen to work on GCLAS.

Funds *spent* by Greg in FY02 went toward his salary and travel for two regional training courses (Central Region and Southeast Region), and salary for user support, help file development, and software development. \$2K was spent for JAVA training (the class was postponed to FY03, but the fee was prepaid), and \$300 went toward purchase of JBuilder 7, a JAVA Integrated Development Environment.

About \$5K of the \$23.1K provided by OSW and OWQ in FY02 was carried over to FY03; about \$2K of that \$5K will go toward Greg's salary for the JAVA training course postponed to FY03.

A file is attached listing the bugs and enhancements that have been addressed as well as listing high-priority enhancements that are planned/desired.

FY03 FACTS, PLANS, AND NEEDS:

Shiva Chen's contract will end in February 2003 and if no other plans for software support are forthcoming, Greg will become the sole technical and software support for GCLAS. It is hard to say how much support will be required, particularly now that GCLAS supports calculation of loads for constituents other than sediment. The cost for the enhancements listed in the attachment are also difficult to assess.

Full GCLAS documentation (assumes 200 copies of color report ~30-40 pages; includes printing; report will also be available on web in pdf format)	\$18K
Greg's salary for JAVA training	\$2K
GCLAS support	<u>\$12K</u>
FY03 Request	\$32K
 GCLAS Support Funds for FY02 (spent) + FY03 (sought)	 \$55.1K
Subtract FY02 Carry Over	<u>- \$5.0K</u>
	\$50.1K

Per prior agreement on user support and documentation, the combined support cost of \$50.1K for FY02 and FY03 should be split evenly between OSW and OWQ for a total of \$25.05K per office. Since **OSW** contributed \$14.3K in FY02, its **FY03 contribution** should be (25.05-14.3) **\$10.75K**. Since **OWQ** contributed \$8.8K in FY02, its **FY03 contribution** should be (25.05-8.8) **\$16.25K**.

FUTURE:

It is too early to develop accurate projections of needs for the program in FY04 and thereafter. The GCLAS development team is in agreement that GCLAS should be part of the NWIS, as opposed to a stand-alone program.

Cc: Steve Blanchard, Robert Mason, and Joseph Nielsen, OSW;
G. Douglas Glysson, OWQ; Scott McEwen, CR; Shiva Chen, OI

Attachment:

High Priority Bugs in GCLAS (status as of 10/10/02)

	Priority	Description	Status	Comments
1	Chosen during GCLAS training	Input/Output problem #8 part a: When rounded concentration data were output in card-image form from the load table, the parameter code was output as the string "undef" rather than 80154.	Fixed	nwis/param/ParamFactory.java: createTempParameter(IParameter, HashMap)
2	Chosen during GCLAS training	Erroneous column heading "aa" was displayed in the Water Quality table instead of the param code name.	Fixed	nwis/param/ParamFactory.java: createTempParameter(String, HashMap)
3	Chosen during GCLAS training	Input/Output problem #8 part b: When rounded concentration data were output in card-image form from the load table, when attempting to write unrounded concentration data, GCLAS used to cause an exception resulting in a zero size report file as a result of the exception.	Fixed	nwis/cardWrite/WriteDailyLoad.java: In the class ConcentrationUnRoundedAdapter: :getStringValue(ILoad)
4	Reported by Greg Koltun	Saving a .csv file as a .gcl file, caused an exception.	Fixed	nwis/rdbRead/ReadFromRdb.java
5	Chosen during GCLAS training	When a Date cell was edited with a new date and user pressed "Enter", the time cell was getting set to System time in GMT.	Fixed	wrd/date/DateCellEditor.java, in method fireEditingStopped() and graphEditFrameWork/table/DateInfoEditor.java
6	Chosen during GCLAS training	If two data values occur on the same day and one of the data values was edited so that its time was earlier in the day than the other value, then the water-quality table was not resorted based on the new entered. Also, the graph was not drawn properly. The data was shown correctly if they are saved to a gpj file and re-read into GCLAS. In general, editing a time cell was not causing a resort of the table based on the new time.	Fixed	Wrd/date/TimeCellEditor.java
7	Chosen during GCLAS training	Error message change.	Fixed	wrd/readWrite/GCLasFileChooser.java
8	High	Loads computed for partial days were not correct. It appeared that the total number of intervals used for discretization of the day was used instead of the actual number of time intervals in the partial day. (note: this bug only affected loads computed for the first and last day of the computation period.)	Fixed	wrd/concalc/ui/compute/ComputeControl.java

9	High	The "Include Estimated Points" toggle on the apply coefficients tab does nothing. Coefficients are applied only to samples identified as being of type single vertical or point. By default, estimated values are given representation type of cross-section.	Replaced by a new feature.	The "Include Est pts" check box has been removed from the Apply Coefficients Tab. The intended functionality for this checkbox was never implemented, misleading the users to think that by checking the box, the estimated points would be taken into account in the calculation when this was not the case. To provide the intended functionality, a different approach was taken by adding a new "Options" menu between "File" and "Help" menus. A "Default Representation" sub menu was added under "Options" menu cascading to 3 choices for the user to select from: "Cross Section", "Single Vertical", and "Point". Now, when the user creates a new estimated point on the Working Graph, the value that is inserted into the Water Quality table has as its Representation what the user selected in the "Default Representation" submenu. Representation type governs application of coefficients.
10	High	When loads were computed sequentially for at least two discontinuous periods, the load table was improperly filled in for the intervening days. These data were not output to card images if card images were subsequently created.	Fixed	wrd/concalc/ui/compute/Compute Control.java
11	High	The user interface is inconsistent when registering edits. For example, after a checkbox is toggled in the water-quality table, the user must (unnecessarily) press the enter key to register the action. Also, after a pick list item is selected in the water-quality table, the user must press the left or right arrow key or click in another cell in the same row to register the action. These functions should be changed to be more consistent with common window-based modes of editing.	Worked on but work presently suspended	Shiva spent a considerable amount of time working on this without much success. We decided to deal with this issue at a later date and work on other problems/issues that are easier to address.
12	High	The logic that deals with the drawing of the concentration line in the working graph is flawed when a data value shown (or a data value that is immediately outside the graph window) is marked as "unusable". This can result in incorrect or missing lines connecting points that span the period	Fixed	

		where a sample is marked as "unusable".		
13	High	Graphic windows do not always update properly, if a data value is added, edited, or removed in any view (graph or table) then all related views should be refreshed.	Believed to be fixed	

High Priority Enhancements needed in GCLAS

	Priority	Description	Status	Comments
1	High	Provide the ability to create nicely formatted printed output of the working graph and the loading table.	In progress	Shiva is presently working on code to create a formatted file (suitable for printing) containing the load table.
2	High	Provide a mechanism for transferring data from the lab or from NWIS without requiring manual reentry.		
3	High	Provide a way to update the stream flow data used in association with a GCLAS project file (without loss of information on coefficients, etc.).		
4	High	Provide a straightforward means of adding non-estimated data to a GCLAS project file.		
5	High	Provide more symbols to enhance graphical representation of sample attributes. At a minimum, the user should be able to distinguish samples on basis of sample representation type and collector.		
6	High	Provide the ability to filter the data shown in the transport plot by sample attributes including: hydrologic conditions, collector, sample representation type, collection method, and time/season.		
7	High	Provide option to compute loads for additional constituents, including constituents that are reported in micrograms per liter. (note: we presently can add constituents to the parameter list, but the calculations are hard coded assuming that the concentration data are in mg/L)	Done	This was completed prior to release of version 1.04. GCLAS now supports a large variety of constituents and can handle several input and output units. Generic codes were added to facilitate use of constituents not explicitly included in the parameter file.
8	High	Provide a straightforward means of substituting daily stream flow data for periods of bad or missing unit stream flow data.		