City of New York Department of City Planning
Information Technology Division
Geographic Systems Section

GEOSUPPORT SYSTEM TECHNICAL BULLETIN 07-01

SUBJECT: Version 10.2 Enhancements

Date: 24 July 2007

Target audience: All Geosupport users

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Introduction

The principal enhancements to Geosupport for Version 10.2 include:

I. ZIP Code as an alternate input of Borough Code input with Functions 1, 1A and 1E
II. Return Multiple Segment IDs for Functions 3 and 3C (Character Only Work Areas)
III. Coincident Segment Count is returned with Functions 1, 1E, 3 and 3C
IV. "From" and "To" Nodes are returned with Function 3 and 3C
V. Add New Values for the Gap flag in the Stretch Record (Used for Function 3S)
VI. Display the Node IDs on GOAT screen for Function 3S
VII. Consistency of data returned with Function 2 calls has been improved
VIII. Function 3S Implemented in Desktop Edition GBAT

In addition various reported bugs have been fixed

User Programming Considerations

I. ZIP Code Input for Functions 1, 1A and 1E

With Version 10.2, you may supply the five-digit ZIP Code in place of the borough code. The ZIP Code is stored in positions 214 through 218 of the Character Only Work Area 1 and in positions 170 through 174 of the Mainframe Specific Work Area 1. If you supply both a ZIP Code and a Borough Code, the Borough Code will be used and in general the ZIP Code will be ignored. Please note that the ZIP Code is not validated. It is mainly used to determine the borough. For example, if you supply a ZIP Code that is valid for the borough, but not for that particular location, the specified function will execute successfully. In addition, the ZIP Code returned in Work Area 2 may be different than the ZIP Code you have supplied. In general the ZIP Codes returned in Work Area 2 are usually accurate for residential areas, since these ZIP Codes are validated by the Board of Elections. If you believe that the ZIP Code returned by Geosupport is incorrect, please forward the address in question with the ZIP Code you believe is correct to George

Minicucci, the Geosupport User Liaison for research. George can be reached at 212-720-3326. His e-mail is gminicu@planning.nyc.gov.

The following table supplies the name of the field for the input ZIP Code in the various supported languages.

Language	**MSW**	**COW**
BAL	W1IZIPIN	P1IZIPIN
C	zipin	zipin
COBOL	GEO-WA1-IN-ZIPIN	GEO-WA1-IN-ZIPIN
PL/1	GEO_WA1_IN_ZIPIN	PIWA1_IN_ZIPIN
NATURAL	GEO-WA1-IN-ZIPCODE	PIWA1-IN-ZIPCODE

The following table shows the Geosupport Return Codes (GRC) and error messages that may be returned if there are problems with the input ZIP Code.

GRC	**Error Message**
71	INPUT ZIP CODE IS NOT A NEW YORK CITY ZIP CODE
72	INPUT ZIP CODE IS NOT ALL NUMERIC

Support of ZIP Code input is available for user applications. It is also available in Mainframe and Desktop Edition GBAT. For Mainframe GBAT, the parameter

ZIPCODE=loc
or
ZIPCODE=loc,5

must be coded if you have ZIP Code input in place of an input borough code. The “loc” represents the starting position of the five-digit ZIP Code in your input. The length of the field is always 5; consequently, if you do not supply the “5” indicating the length of the ZIP Code, GBAT assumes a length of five.

ZIP Code input is permitted with Desktop Edition GBAT for Functions 1 and 1E.

II. Return Multiple Segment IDs for Functions 3 and 3C (Character Only Work Areas)

Function 3 and 3C may at the user’s option return information related to more than one segment usually when there is a non-blank value in the Generated Record Flag field. If it is important to the user to know the Segment IDs that make up these generated record segments, this information may be requested with a Function 3 or 3C call. To request this information, the SEGAUX switch in position 326 of the Character Only Work Area 1 must be set to **Y**. The following table shows the name of this field in the Geosupport supplied copy books.

Language	COW
BAL	P1ISEGAX
C	segaux_switch
COBOL	PIWA1-IN-SEGAUX-SWITCH
PL/1	PIWA1_IN_SEGAUX_SWITCH
NATURAL	PIWA1-IN-SEGAUX-SWITCH

The following table shows the Geosupport Return Codes (GRC) and error messages that may be returned if there are problems with the AUXSEG Switch.

GRC	Error Message
69	INVALID AUXSEG REQUEST SWITCH. MUST BE Y, N OR BLANK
70	AUXSEG REQUEST SWITCH NOT VALID FOR THIS FUNCTION

Please note that this functionality is only available with the Character Only Work Areas. The additional information will be added to the end of the existing Work Area 2 for Functions 3 or 3C. The layout of the data is in the following table

Description	Size	From	To
Filler	6	1	6
Number of Segment IDs	4	7	10
Segment IDs (Up to 70 Segment IDs)	7 Each (490)	11	500

The following table gives the names of the fields for the supported languages. Please note the names for Function 3 are listed before the names for Function 3C.

Language	Number of Segments	Segment IDs
BAL	P2F3SCNT P2F3SCNT	P2F3SGID P23CSGID
C	seg_cnt	segments
COBOL	PIWA2-FN3-SEGAUX-CTR PIWA2-FN3C-SEGAUX-CTR	PIWA2-FN3-SEGAUX-SEGS PIWA2-FN3C-SEGAUX-SEGS
PL/1	PIWA2_FN3_SEGAUX_CTR PIWA2_FN3C_SEGAUX_CTR	PIWA2_FN3_SEGAUX_SEGS PIWA2_FN3C_SEGAUX_SEGS
NATURAL	PIWA2-FN3-SEGAUX-CTR PIWA2-FN3C-SEGAUX-CTR	PIWA2-FN3-SEGAUX-SEGS PIWA2-FN3C-SEGAUX-SEGS

In GOAT, you have the ability to display the Segment IDs with Functions 3 and 3C. If you wish to see the Segment IDs, you must replace the N with a Y following the label “Show Seg Ids:”. The Segment IDs will be displayed on your display unit under the cross streets. Under the label “Segments:”, the number of segments will be displayed. If there are two or more cross streets at either end of the segment, a maximum of 16 segments will be displayed. If there is only one cross street at each end of the segment, then a maximum of 24 segments will be displayed.

In Mainframe GBAT, if you wish to obtain the Segment IDs, you must add the parameter

AUXSEG=Y

to your control cards. The Character Only Work Area length of Work Area 2 that will be returned is 950 bytes for Function 3 and 800 bytes for Function 3C. Consult the *User Programming Guide* for the length of the output as a function of other values of GEOCODE and CROSSSTNAMES.

Desktop Edition GBAT also provides the option of requesting and receiving a list of segments for Functions 3 and 3C.

III. Coincident Segment Count

There are situations where one road is above another road (double decker roads - see examples below). The Coincident Segment Count has been introduced to provide you with an indication of this situation. Most streets such as Broadway in Manhattan have a value of one in the Coincident Segment Count. However there are a few streets where the Coincident Segment Count is greater than one. An example of this is Third Avenue and the Gowanus Expressway in Brooklyn. The Gowanus Expressway is above Third Avenue from about 18th Street until 63rd Street. Another example is the upper and lower roadways of the George Washington Bridge. For these segments, the Coincident Segment Count is two.

This information is returned for Functions 1, 1E, 3 and 3C.

The following table indicates where in Work Area 2 the Coincident Segment Count may be found.

Function	COW	MSW
1/1E	214	135
3	146	26
3C	146	26

The following table indicates the labels used in the COPYLIBS for the various languages supported by Geosupport. Please note that there are no separate layouts for Function 1E in the Character Only Work Areas. For Function 1E, you use the same layout as you would use for Function 1.

Language	MSW	COW
BAL	W2F1CSC W2F3CSC W23CCSC	P2F1CSC P2F3CSC P23CCSC
C	coincident_seg_cnt	coincident_seg_cnt

Language	MSW	COW
COBOL	GEO-WA2-FN1-COINCIDENT-CNT GEO-WA2-FN1E-COINCIDENT-CNT GEO-WA2-FN3-COINCIDENT-CNT GEO-WA2-FN3C-COINCIDENT-CNT	GEO-WA2-FN1-COINCIDENT-CNT GEO-WA2-FN3-COINCIDENT-CNT GEO-WA2-FN3C-COINCIDENT-CNT
PL/1	GEO_WA2_FN1_COINCIDENT_SEG_CTR GEO_WA2_FN1E_COINCIDENT_SEG_CTR GEO_WA2_FN3_COINCIDENT_SEG_CTR GEO_WA2_FN3C_COINCIDENT_SEG_CTR	PIWA2_FN1_COINCIDENT_SEG_CTR PIWA2_FN3_COINCIDENT_SEG_CTR PIWA2_FN3C_COINCIDENT_SEG_CTR
NATURAL	GEO-WA2-FN1-COINCIDENT-SEG-CTR GEO-WA2-FN1E-COINCIDENT-SEG-CTR GEO-WA2-FN3-COINCIDENT-SEG-CTR GEO-WA2-FN3C-COINCIDENT-SEG-CTR	PIWA2-FN1-COINCIDENT-SEG-CTR PIWA2-FN3-COINCIDENT-SEG-CTR PIWA2-FN3C-COINCIDENT-SEG-CTR

In GOAT, the Coincident Segment Count is only displayed for Function 1.

In GBAT, both Mainframe and Desktop Edition, the Coincident Segment Count is always returned for the four supported functions; namely Functions 1, 1E, 3 and 3C.

IV. "From" and "To" Nodes Returned with Function 3 and 3C

The "From" and "To" Nodes are returned with Function 3 and 3C calls, but only with the Character Only Work Areas. The following table indicates the location of the "From" and "To" Nodes in the appropriate Work Area 2s.

FUNCTION	"From" Node	"To" Node
3	115-121	122-128
3C	115-121	122-128

The following table indicates the field names in the supported languages.

Language	"From" Node	"To" Node
BAL	P2F3FROM P23CFROM	P2F3TO P23CTO
C	from_node	to_node
COBOL	GEO-WA2-FN3-FROM-NODE GEO-WA2-FN3C-FROM-NODE	GEO-WA2-FN3-TO-NODE GEO-WA2-FN3C-TO-NODE
PL/1	PIWA2_FN3_FROM_NODE PIWA2_FN3C_FROM_NODE	PIWA2_FN3_TO_NODE PIWA2_FN3C_TO_NODE
NATURAL	PIWA2-FN3-FROM-NODE PIWA2-FN3-TO-NODE	PIWA2-FN3C-FROM-NODE PIWA2-FN3C-TO-NODE

GBAT, both Mainframe and Desktop Edition, will return the "From" and "To" nodes. In Mainframe GBAT, you must specify the Character Only Work Areas.

V. New Values for the Gap Flag for Function 3S

The data returned for a Function 3S call includes a "Gap" Flag for each segment in the list. In the past, the Gap Flag has always been set to **G** when there is a break in a street such as exists with 7 Avenue between Central Park South and West 110 Street in Manhattan. The length returned represents the distance between the end of one string of segments and the start of the next string of segments. With 7 Avenue in Manhattan, the length would be the distance from the intersection of 7 Avenue and Central Park South and the intersection of 7 Avenue and West 110 Street.

There are situations where merely indicating that a gap exists is not sufficiently descriptive. To handle these situations, two new values for the Gap Flag have been introduced.

1. 'D' for a Dog Leg
2. 'N' for a New Stretch.

Example of Dogleg:

Looking at Elk Street in Manhattan, which exists between Chambers Street and Duane Street, there is a gap at Reade Street. This is not a real gap, but rather a dogleg. Gaps of this nature are now identified with the letter **D** to indicate the existence of a dogleg. The length field contains the length of the dogleg.

Examples of New Stretch:

1. A new stretch may involve situations where there are multiple roadbeds like Ocean Parkway in Brooklyn and Allen Street in Manhattan. In these cases one roadbed is listed first and then the first segment of each of the roadbeds is listed as New. The length field which contains the distance from the previous node is set to zero.

2. A new stretch may involve a triangle, which occurs when a road veers off for one or more segments and then comes back. Examples of this exist in the Bronx involving White Plains Road and Rhinelander Avenue. In this case, Rhinelander Avenue appears twice in the White Plains Road stretch; once as part of the entire street and once as a "New" one-segment stretch between nodes 0079418 and 0079417. Another example of a triangle is Queens Boulevard between Yellowstone Boulevard and 70 Road. On the southern side of Queens Blvd, there is a "spur" of Queens Boulevard between Yellowstone Boulevard and 70 Road separated from the main portion of Queens Boulevard by MacDonald Park. In any case the length field is set to zero.

3. In the Bronx, the Throgs Neck Expressway has several separate stretches some of which have a different name (Throgs Neck Boulevard), but use the same five digit street code. In the past these segment types were added to the end of the main stretches with the first segment having its gap flag set to **G** and an impossible value in the length field

for the distance from the previous node. This did not represent reality. For entries with the value of **N** the length from the previous node will now be set to zero.

VI. Display the Node IDs on GOAT screen for Function 3S

This enhancement has no user programming considerations.

VII. Consistency of data returned with Function 2 Calls has been improved

Certain information to be returned has, in the past, been selected on a random basis with the result that different results would be returned from one data release to the next. Guidelines have been established to determine what information will be returned. For example, when multiple segments are combined, the Segment ID returned to the user is now always the lowest numeric Segment ID.

VIII. Function 3S Implemented in Desktop Edition GBAT

Function 3S is now available for use in the Desktop Edition of GBAT.