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

GEOSUPPORT SYSTEM TECHNICAL BULLETIN 09-01

SUBJECT: Version 10.6 Enhancements

Date: 3 February 2009

Target audience: All Geosupport users

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Introduction

The principal enhancements to Geosupport for Version 10.6 include:

I. Partial Implementation of Roadbed Processing with Function 3S for Beta Testing (COW[1] and MSW[2])
II. Enhancement of Function 3S to Return More Precise Information (COW and MSW)
III. Implementation of Fuzzy Street Name Search for Function 3S (COW and MSW)
IV. Enhancement of Similar Street Name Processing (COW and MSW)
V. Ignore Digits after Dash in Address Number When There are More Than 3 Digits (COW and MSW)
VI. Miscellaneous Enhancements and Corrections

User Programming Considerations

I. Partial Implementation of Roadbed Processing with Function 3S for Beta Testing (COW and MSW)

Function 3S is used to obtain information about street stretches. With the introduction of this enhancement, users will be able to obtain roadbed street stretches via the Roadbed Request Switch as opposed to only generic street[3] stretches. Please be aware that the roadbed processing, which is only partially implemented, may change and is being provided to enable you, the user, to examine and beta test this new functionality. We would appreciate your beta testing this partial implementation and letting us know what you like and what you do not like.

[1] Character-Only Work Area
[2] Mainframe-Specific Work Area
[3] Generic streets are single line representations of streets that have multiple roadbeds, such as Queens Boulevard in Queens, the Grand Concourse in the Bronx, Broadway (in the Upper West Side) in Manhattan and Ocean Parkway in Brooklyn.

As in the past, information about generic street stretches may be obtained for the entire street stretch or for part of a street stretch. However information about roadbed street stretches may only be obtained for the entire stretch. There are a few exceptions to this such as Allen Street in Manhattan, which may return information for part of the stretch. The exceptions are related to whether or not the particular divided street was included in the base file prior to implementing horizontal topology (Release 06A). Information about part of a street stretch is not fully functional and will result in a Geosupport Return Code (GRC) of 96. It is expected to be fully functional in a future release of Geosupport.

It is the user's responsibility to set the Roadbed Request Switch which is in Work Area 1 (position 324 in the COW and in position 132 in the MSW). The Roadbed Request Switch was introduced at the same time that roadbed processing was introduced for Functions 1/1E (Version 9.7.5). The following table provides the Roadbed Request Switch label name for each of the supported languages for both COW and MSW.

Language	**Label (COW)**	**Label (MSW)**
BAL	P1IRBRQS	W1IRBRQS
C	roadbedrequest	roadbedreq
COBOL	PIWA1-IN-ROADBED-REQ-SWITCH	GEO-WA1-IN-ROADBED-REQ-SWITCH
PL/1	PIWA1_IN_ROADBED_REQ_SWITCH	GEO_WA1_IN_ROADBED_REQ_SWITCH
Natural	PIWA1-IN-ROADBED-REQ-SWITCH	GEO-WA1-IN-ROADBED-REQ-SWITCH

If the Roadbed Request Switch is set to **R**, then a roadbed street stretch will be returned to the user. A blank will result in a generic street stretch being returned to the user. Any other value will result in a Geosupport Return Code (GRC) of 65.

If a user supplies a generic name for a multi-roadbed street and the Roadbed Request Switch indicates that generic processing is desired, the output will be virtually the same as in the past. An example of this would be Park Row in Manhattan.

If a user supplies a generic name for a multi-roadbed street and the Roadbed Request Switch indicates that roadbed processing is desired, the output may or may not be what was provided in the past. If the generic name supplied represents an undivided street, the generic and roadbed processing will produce the same output and it is possible to request part of the street stretch. If the generic name supplied represents a multi-roadbed street either in part or in full, then only the entire stretch may be requested. If only part of the street involves a multi-roadbed, then the undivided portion may be requested in part. For example, 58 Avenue in Queens is undivided in part. Consequently you may ask for roadbed processing from, say, 211 Street to 219 Street. If you ask for roadbed processing from, say, 214 Street to 218 Street, you will receive GRC 96 indicating that this functionality is under development. If the entire stretch is requested with roadbed processing, the output will be different than what the output is for generic processing. The output starts with Rust Street and continues supplying the cross streets until about 213 Street where 58 Avenue becomes a multi-roadbed street. All of the intersecting streets on one roadbed are presented until about 219 Street, where 58 Avenue becomes

undivided. The output then returns to earlier segments where 58 Avenue branched off as well as the segments for the other roadbed between 211 Street and 219 Street.

If a user supplies a street name that is defined as a roadbed name, but does not set the Roadbed Request Switch to indicate that roadbed processing is requested, then a GRC of 57 with the associated error message of "INPUT INCLUDES ROADBED NAME, BUT ROADBED REQUEST SWITCH IS OFF" will be returned to the user.

If a user supplies a street name that is defined as a roadbed name and sets the Roadbed Request Switch to indicate that roadbed processing is requested, then only those streets within the two cross streets that intersect the specified roadbed will be returned in the output. For example if you request the stretch for Park Avenue Northbound Roadbed and set the Roadbed Request Switch to indicate that roadbed processing is requested, then the output will include the streets that cross the northbound roadbed.

Both Mainframe and Desktop Edition of GOAT and GBAT have been enhanced to accept the Roadbed Request Switch for Function 3S. For Mainframe GBAT to request roadbed street stretches, you must add the parameter ROADBED=YES to your control statements.

II. Enhancement of Function 3S to Return More Precise Information (COW and MSW)

In previous Geosupport releases, Function 3S determined the stretch based upon the primary street name that corresponded to the input on-street. Thus, if the on-street was a locally-valid name, e.g. 'FASHION AVENUE' in Manhattan, Geosupport would return all the intersections in the stretch corresponding to '7 AVENUE' in Manhattan which is the primary valid street name for the entire street.

As of Version 10.6, Geosupport will return only the intersections where the name 'FASHION AVENUE' in Manhattan is valid. In this example, Version 10.6 of Geosupport will return 16 intersections for 'FASHION AVENUE' in Manhattan whereas in the past it returned 108 intersections which reflected the entire stretch of '7 AVENUE' in Manhattan.

If the user provides street code input instead of street name input, Geosupport will use the B7SC to find the stretch of the locally-valid street. In the past, Geosupport used only the B5SC which resulted in the entire street being searched. Of course, if the user supplies only the B5SC the entire street will be searched, which, hopefully, is what the user intended.

In COW work areas, the entries in the list of intersections will include B7SCs instead of the B5SCs as had been returned previously. User's who are still using MSW work areas will find B5SCs in the list of intersections as in the past.

III. Implementation of Fuzzy Street Name Search for Function 3S (COW and MSW)

Under certain conditions, Function 3S will return data when front-truncated street names are given as input.

When a user supplies an on-street that is a front-truncated street name with no limiting cross streets, Geosupport will return data only if the front-truncated street name may only be a single street name. For example, if a user supplies '7 STREET' in Manhattan as the on-street, Geosupport knows that the only possibility is 'EAST 7 STREET' in Manhattan since there is no 'WEST 7 STREET'.

When a user supplies all three input street names; that is, the on-street and two cross streets, and one or more of these street names is a front-truncated street name, Geosupport will return data if only one of the street names related to the front-truncated street name supplied actually intersects the on-street. If a user inputs '57 STREET' between 'PARK AVENUE' and 'SEVENTH AVENUE', Geosupport will not provide data, because in Manhattan 'EAST 57 STREET' intersects 'PARK AVENUE' and 'WEST 57 STREET' intersects 'SEVENTH AVENUE'. 'EAST 57 STREET' and 'WEST 57 STREET' are not considered to be the same streets. Geosupport will return the Geosupport Return Code (GRC) of 'EE' for '57 STREET' and provide a list of similar names which will include both 'EAST 57 STREET' and 'WEST 57 STREET'.

If, for example, a user inputs 'MADISON AVENUE' between '57 STREET' and '69 STREET' in Manhattan as the input for Function 3S, Geosupport will determine that the user probably meant 'MADISON AVENUE' between 'EAST 57 STREET' and 'EAST 69 STREET' in Manhattan. If the user inputs '64 STREET' between 'SECOND AVENUE' and 'LEXINGTON AVENUE' in Manhattan, Geosupport will determine that the user probably meant 'EAST 64 STREET' between 'SECOND AVENUE' and 'LEXINGTON AVENUE' in Manhattan.

A warning message with Reason Code J will be issued when Geosupport assumes a name that is different from the input street name.

The Function 3S fuzzy search is similar to the fuzzy search for Function 2 Intersection Processing, which was described in Geosupport Technical Bulletin 07-2, Version 10.3.

IV. Enhancement of Similar Street Name Processing (COW and MSW)

When Geosupport does not recognize a user's input street name, Geosupport uses many criteria to find SIMILAR NAMES. One of these criteria has been modified to help return more likely similar names towards the beginning of the list of similar names. The current criteria (pre-Version 10.6) included a check for matching only the first three characters of the input street name. Given the growth of the Geosupport Street Name Dictionary, this can easily result in the user getting ten 'similar names' that do not include what the user had in mind, or the desired name may be very low on the list. For example, prior to Version 10.6, if the input street name was 'BROADWAY TERRACH' in Manhattan,

‘BROADWAY TERRACE’, which is what the user probably intended, appeared as the eighth entry in the list of similar names.

As of Version 10.6, the criterion has been enhanced to try to match many more letters in the input street name. Using the same example as above, if the input street name is ‘BROADWAY TERRACH’ in Manhattan, ‘BROADWAY TERRACE’ will appear first in the list of similar names.

The actual algorithm to determine similar names is somewhat complex and a complete description of it is beyond the scope of this document.

V. Ignore Digits after Dash in Address Number When There are More Than 3 Digits (COW and MSW)

With Version 10.6, Geosupport address number processing has been enhanced to ignore the digits following the dash when there are more than 3 digits and the address numbers on that street are not hyphenated. If the address numbers for the specified street are hyphenated, then the user will continue to receive the appropriate Geosupport Return Code (GRC) 13 with Reason Code 2. The message reads ‘ADDRESS NBR XX-XXXX HAS MORE THAN 3 DIGITS AFTER THE DASH”. XX-XXXX represents the user’s original input. For non-hyphenated streets, only the digits preceding the dash will be used. For mixed streets, which are defined as streets having both hyphenated and non-hyphenated address numbers, only non-hyphenated will be assumed using the digits preceding the dash; that is, an attempt will be made to process the address without the digits following the dash.

VI. Miscellaneous Enhancements and Corrections

An invalid PAD record was found in the PAD. Geosupport has been modified to detect invalid PAD records and provide the user with Geosupport Return Code of 88 with Reason Code of J. It is the user’s responsibility to inform the Department of City Planning/Geographic Systems Section whenever this occurs to enable us to correct the PAD.

In addition, various minor reported bugs have been fixed.

TABLE OF GEOSUPPORT FUNCTIONS

Function	User Input	Selected Geosupport Output Items
1	Address	Standardized Street Name and Street Code, Address Range, List of Cross Streets, Zip Code, Community District, Health Area, Health Center District, 1990 Census Tract, 2000 Census Tract and block, Fire Engine or Ladder Company, School District, Police Precinct, XY Coordinates (based on the State Plane Coordinate System)
1E	Address	Same as for Function 1 + Political Geography (Election District, Assembly District, Congressional District, City Council District, Municipal Court District and State Senatorial District)
1A	Address	Standardized Street Name and Street Code, Tax Block and Lot, Alternative Addresses for Lot, Building Identification Number, RPAD Building Class, Interior Lot Flag, Vacant Lot Flag, Irregularly-Shaped Lot Flag, Corner Code, etc.
1N	Street Name	Standardized Street Name and Street Code (not available in the Desktop Edition of GOAT)
2	Pair of Intersecting Streets or Named Intersection	Standardized Street Name and Street Codes, List of Additional Cross Streets, Zip Code, Community District, Health Area, 1990 and 2000 Census Tract, Fire Districts, School District, Police Precinct, XY Coordinates (based on State Plane Coordinate System)
3	On Street and a pair of Consecutive Cross Streets	Standardized Street Names and Street Codes, Lists of Cross Streets at both ends, and information about both sides of the street, (including Zip Codes, Community Districts, Health Areas, 1990 and 2000 Census Tracts, Fire Districts, School Districts, Police Precincts)
3C	On Street and a Pair of Consecutive Cross Streets & a Compass Direction (Side of Street)	Same as Function 3 but for one side of the street only (Blockface information)
3S	On Street and an Optional pair of any Intersecting Street along the On Street	Street Stretch information: List of intersecting streets in order along 'on' street, the distance between them and node IDs
BF, BB	Character String	List of street names in alphabetic order - supports street name browsing
BL	Tax Block and Lot	List of Addresses for Lot, List of Building Identification Numbers (BINs), RPAD Building Class, Interior Lot Flag, Vacant Log Flag, Flag, Corner Code, etc.
BN	Bldg Identification Number	List of Address Ranges for Building, Tax Block and Lot, RPAD Building Class, Interior Lot Flag, Vacant Lot Flag, Irregularly Shaped Lot Flag, Corner Code etc.
D,DG,DN	Street Code and/or House Number	Street Name and./or House Number in Displayable Format