Geoclient API

Why bother?

Easy access to Geosupport

Goodnight!

We love you, New York City!

Come again soon!

What is Geosupport?

Geosupport is...

The City of New York's

Official

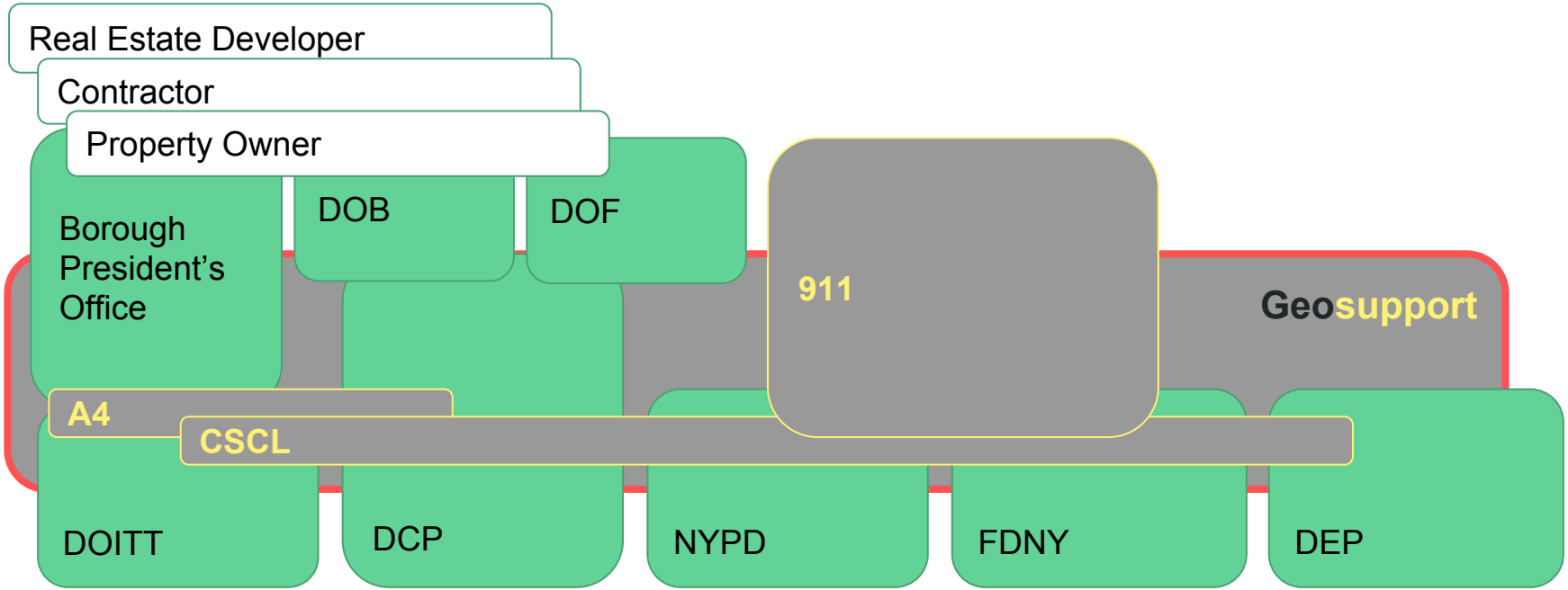
"Geocoder of Record"

Geosupport is…

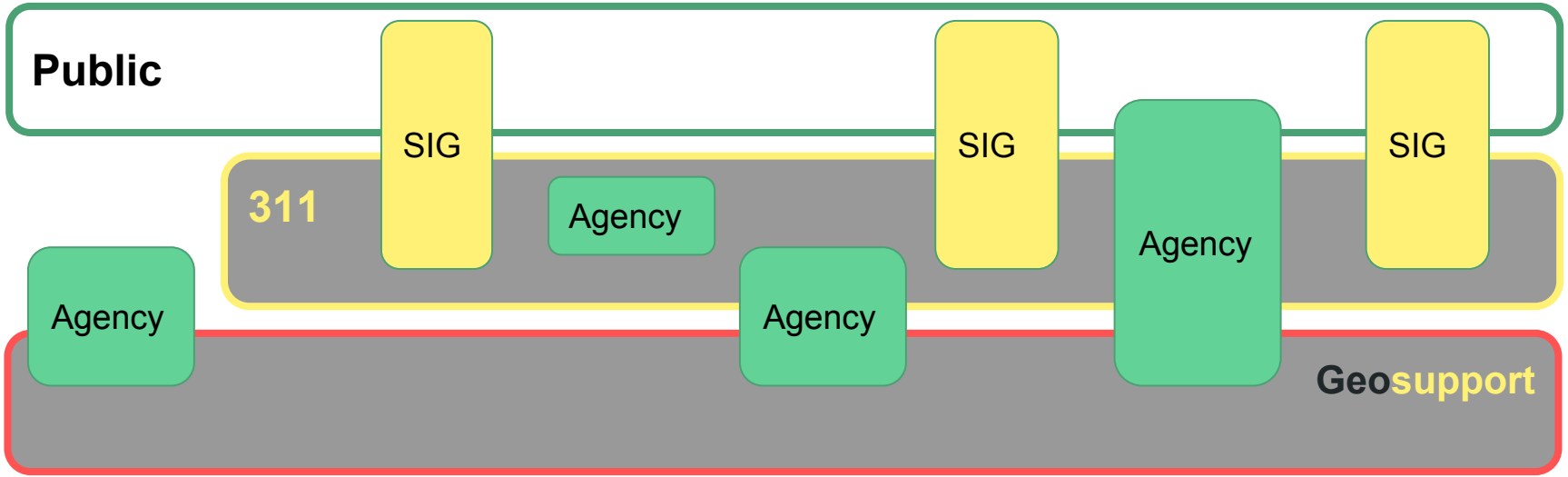
NYC’s geocoder since the early 1980’s!

(*before Brooklyn®*)

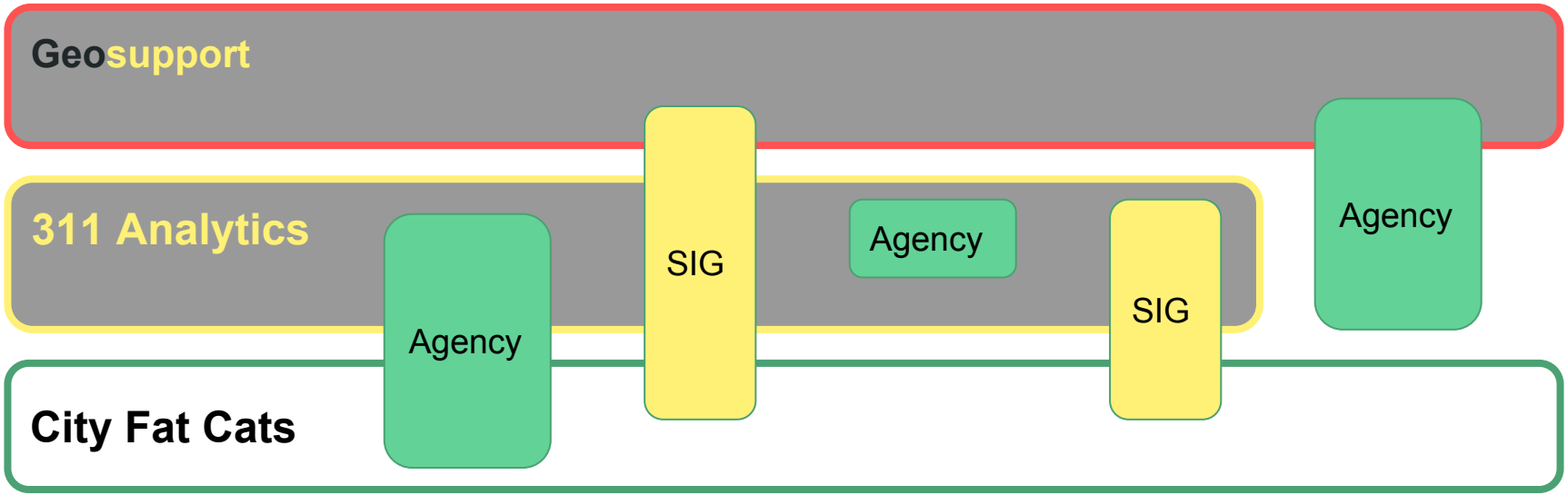
Geosupport - “Lingua Franca”



Geosupport - Data Validation & Standardization

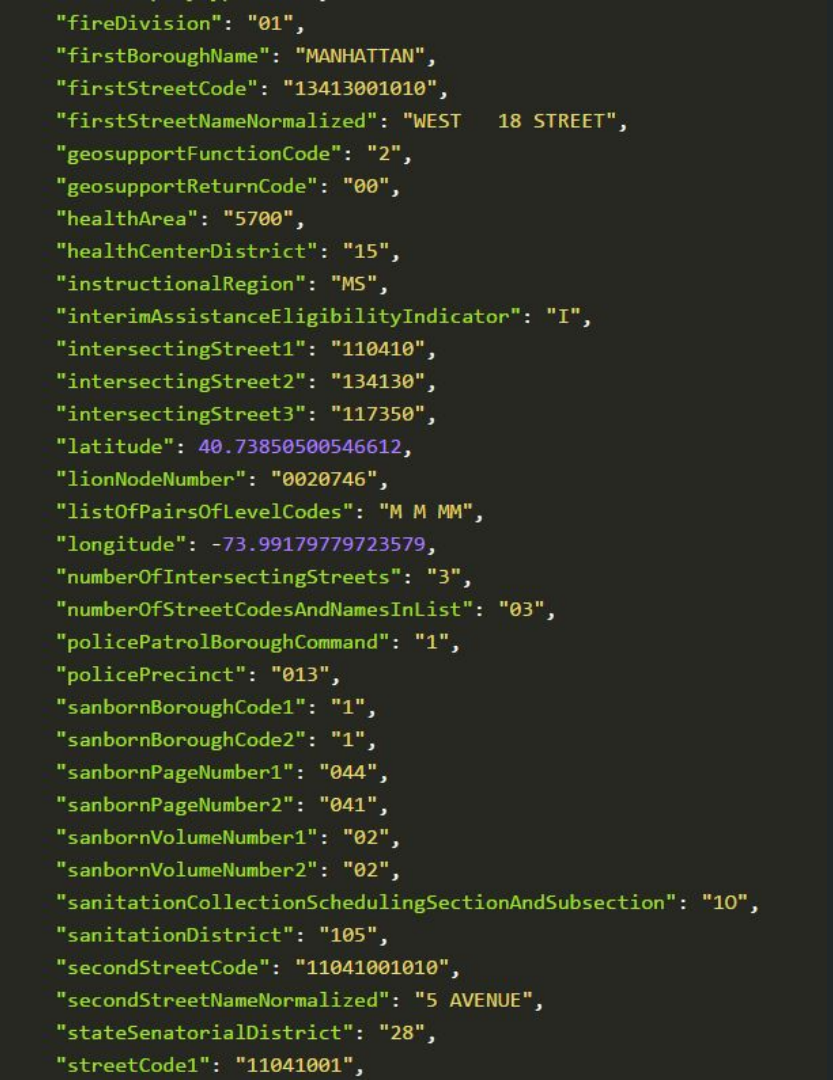


Geosupport - Data Validation & Standardization



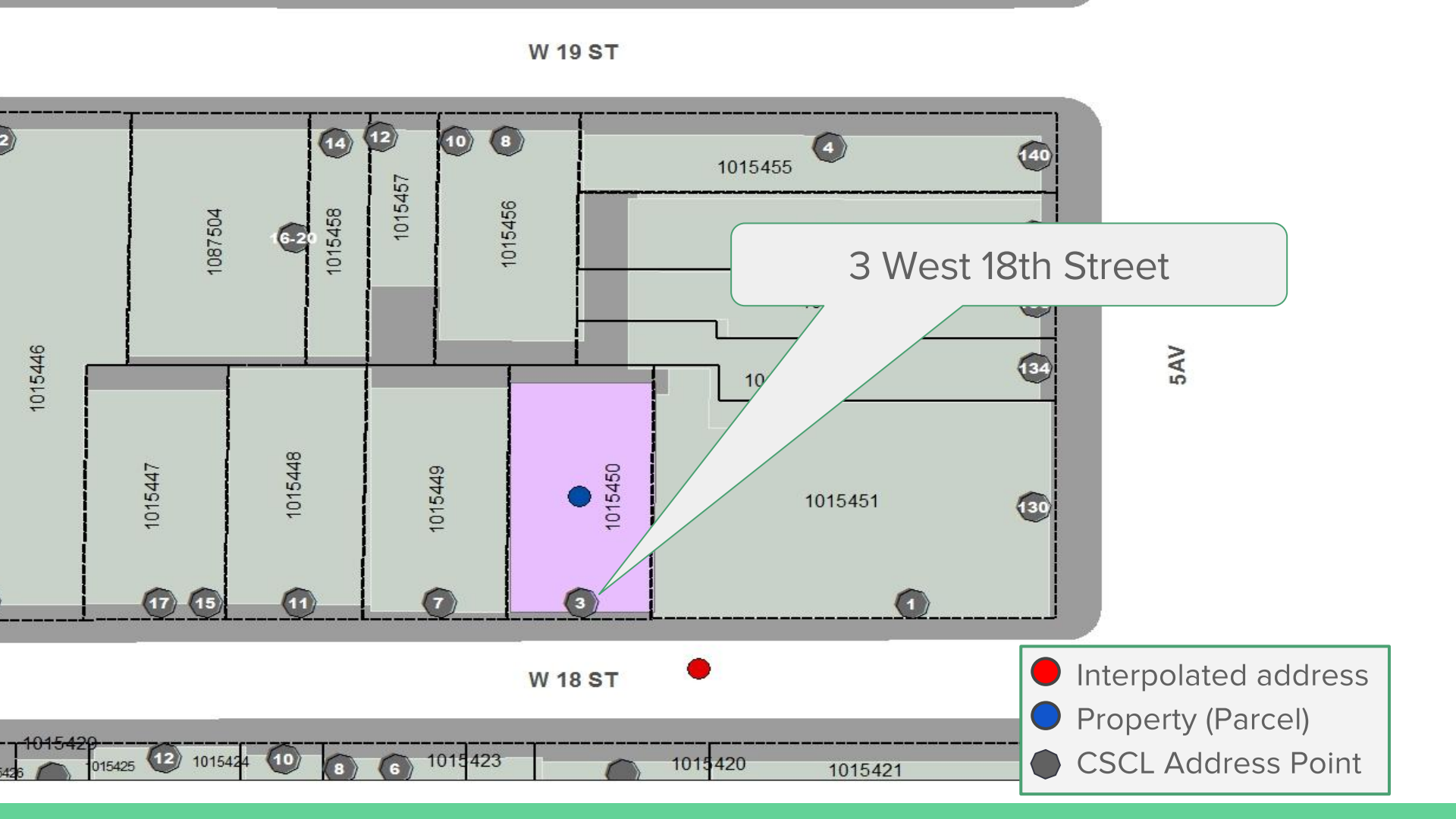
Geosupport is used by agencies like

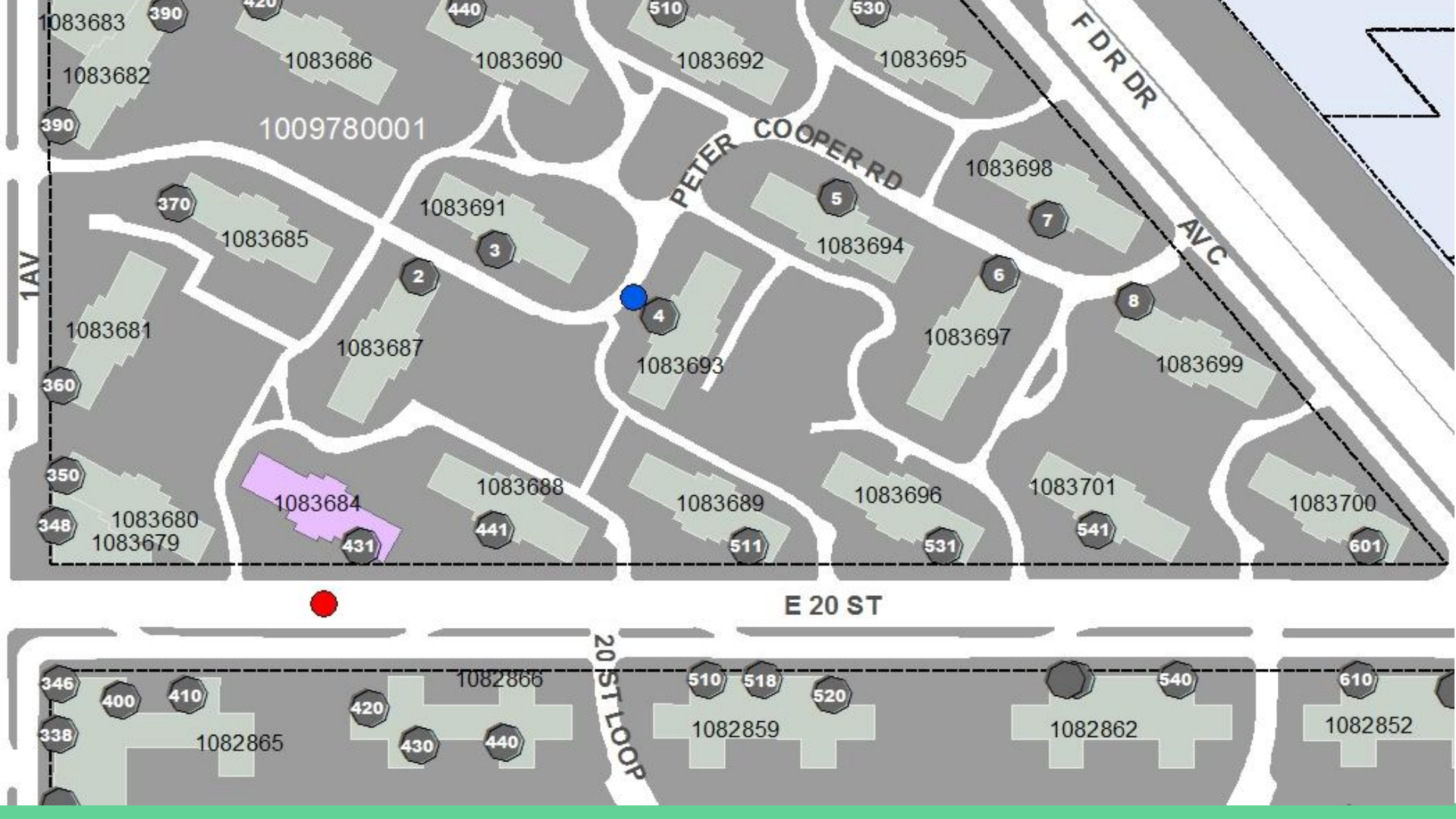
311, 911, ACJ, ACS, AJC, BCPA, BIC, BOC, BOE, BPL, BSA, Bronx DA, Brooklyn DA, CAU, CB, CCHR, CCPC, CCRB, CECM, CEO, CFB, COIB, COMP, CSC, CUNY, DCA, DCAS, DCLA, DCP, DDC, DEP, DFTA, DHS, DOB, DOC, DOE, DOF, DOHMH, DOI, DOITT, DOP, DOT, DPR, DSNY, DYCD, EDC, FDNY, GNYC, HPD, HRA, HRO, IA, LAW, LOFT, LPC, MCCM, MOA, MOCS, MODA, MOIA, MOIGA, MOME, MOPD, MOSE, MOVA, Manhattan DA, Mayor's Office of Criminal Justice, NBAT, NYCERS, NYCGO, NYCHA, NYCOA, NYPD, NYPL, NYW, NYWB, New York City Council, OATH, OCDV, OCME, OEC, OEM, OER, OLR, OLTPS, OM, OMB, OPA, OPS, PPB, PPF, SBS, SNP, Staten Island DA, TAT, TC, TLC, WIB, ...



Geosupport has lots of data

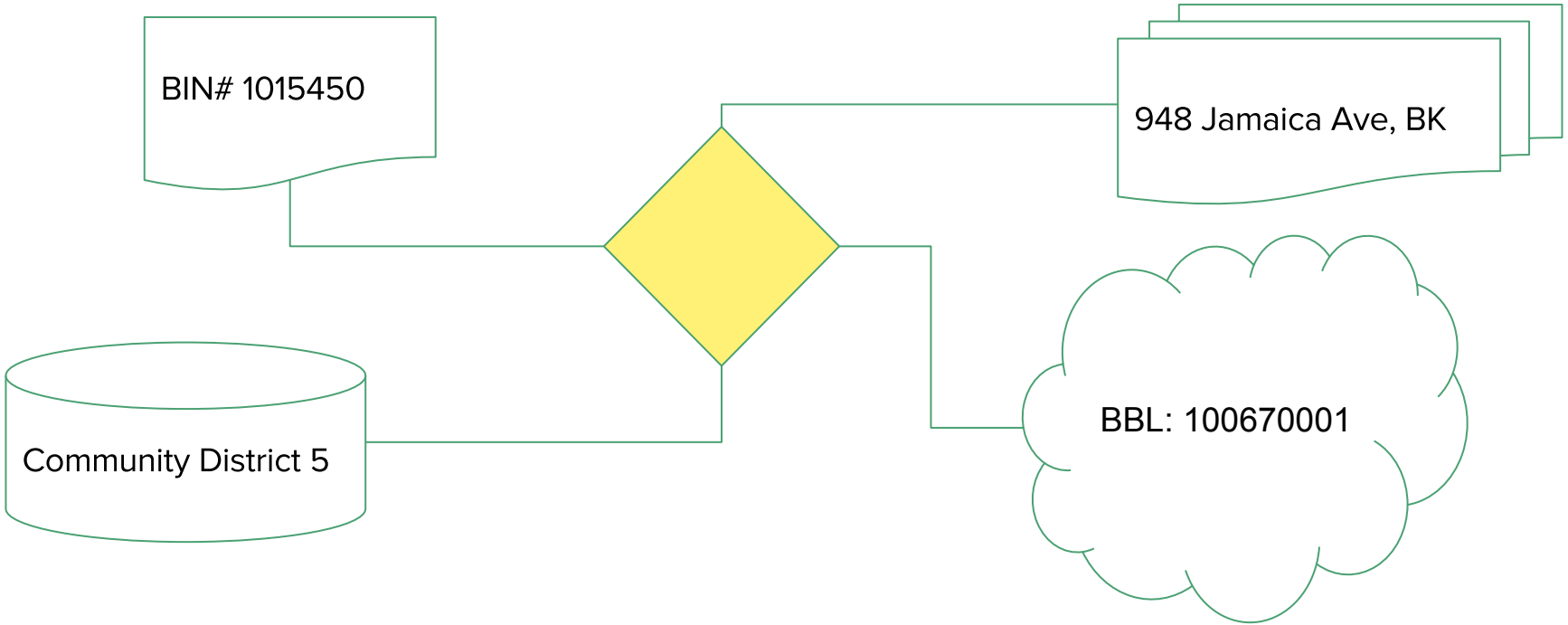
(If you're into that kind of thing)


W 19 ST
1015455
1087504
1015458
1015457
1015456
1015446
1015447
1015448
1015449
1015450
1015451
5AV
3 West 18th Street
W 18 ST
1015420
1015425
1015424
1015423
1015420
1015421
Interpolated address
Property (Parcel)
CSCL Address Point


1083683
390
420
440
510
530
1083682
1083686
1083690
1083692
1083695
F D R DR
390
1009780001
PETER COOPER RD
1083698
370
1083691
5
7
1083685
3
1083694
AV C
1AV
2
6
8
1083681
4
1083697
1083687
1083693
1083699
360
350
1083688
1083684
1083689
1083696
1083701
1083700
348
1083680
1083679
441
511
531
541
601
431
E 20 ST
20 ST LOOP
346
400
410
1082866
510
518
520
540
610
420
338
1082865
430
440
1082859
1082862
1082852

Geosupport is...

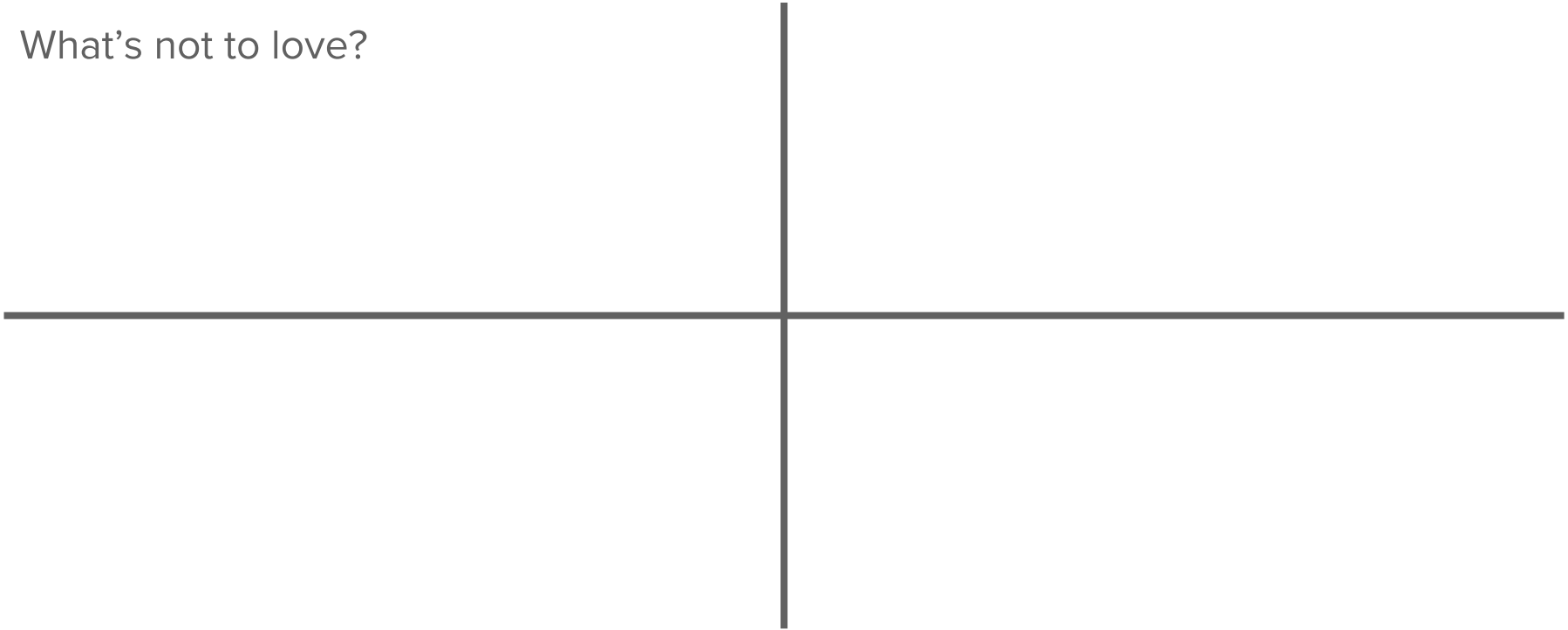
A magic, get-out-of-jail-card-style, foreign-key



Does NYC need it’s own geocoder?

Intersections

What’s not to love?



Intersections

Although, they can be annoying...

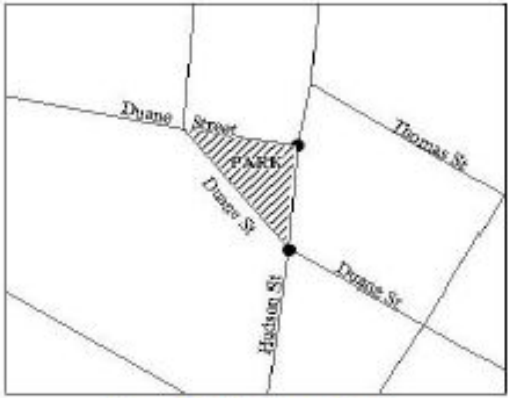
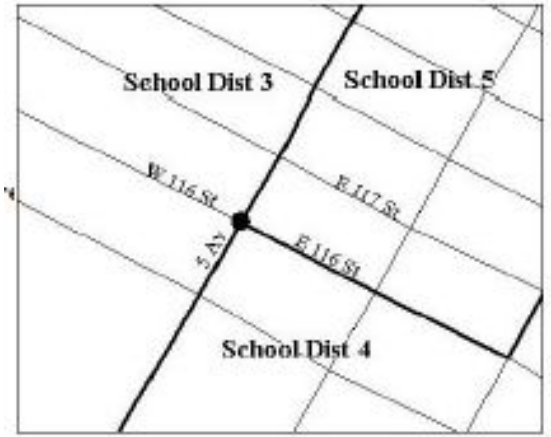


Figure VII-7: Street Fork



Intersections

Now you're just being mean.

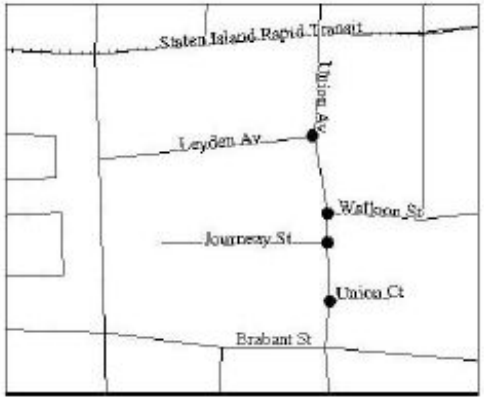


Figure VII-17: T-Intersections on Alternating Sides of street

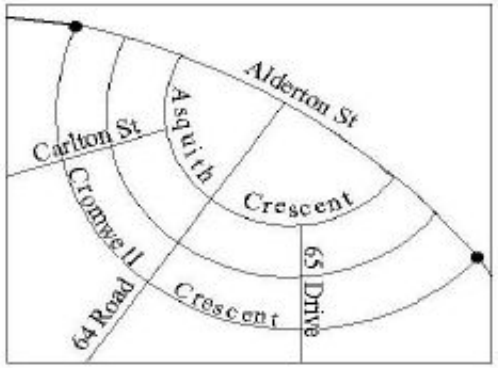


Figure VII-5: Street Intersecting Twice with Curved Street

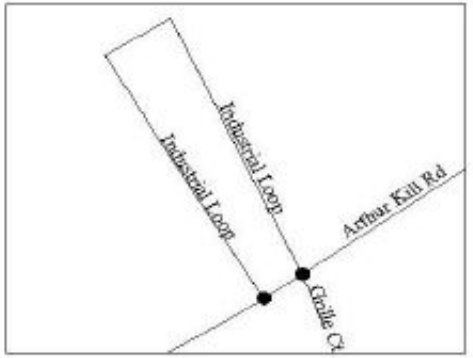
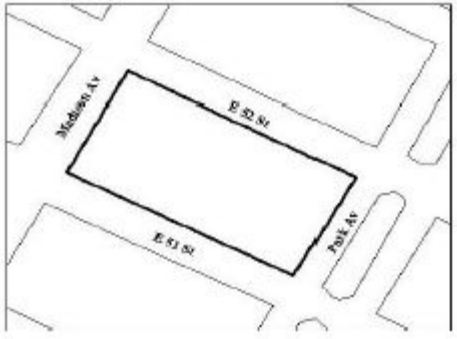


Figure V11-9: Simultaneous 2-Node and Unique-Node Case

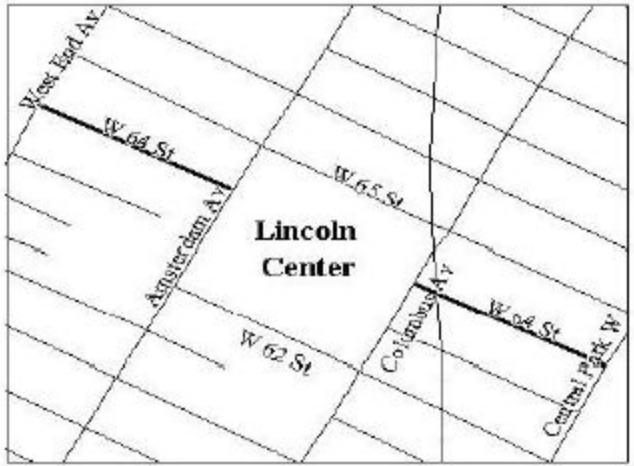
Blockface

Et tu, Blockface?



FigureV11-14: Block with Four Blockfaces

Figure V11-12: Street Stretch



FigureV11-13: Street Stretch Containing Gap

Street Name	B10SC =	BORO+	5SC +	LGC +	SNC
A C POWELL BOULEVARD	11061001010	1	10610	01	010
AC POWELL BOULEVARD	11061001020	1	10610	01	020
ADAM C POWELL BOULEVARD	11061001030	1	10610	01	030
ADAM POWELL BOULEVARD	11061001040	1	10610	01	040
ADAM POWELL JR BOULEVARD	11061001050	1	10610	01	050
ACP BOULEVARD	11061001060	1	10610	01	060
A C P BOULEVARD	11061001070	1	10610	01	070
POWELL BOULEVARD	11061001080	1	10610	01	080
ADAM CLAYTON POWELL BOULEVARD	11061001090	1	10610	01	090
ADAM CLAYTON POWELL JR BOULEVARD	11061001100	1	10610	01	100
FASHION AVENUE	11061002010	1	10610	02	010
SAINT VINCENTS SQUARE	11061003010	1	10610	03	010
ST VINCENTS SQUARE	11061003020	1	10610	03	020
7 AVENUE	11061004010	1	10610	04	010
SEVENTH AVENUE	11061004020	1	10610	04	020

House Numbers

- 519 Front East 12th Street, Manhattan
- 625 Rear Smith Street, Brooklyn
- 120 1/2 First Avenue, Manhattan
- 240-55 1/3 Depew Avenue, Queens
- 469 1/4 Father Capodanno Boulevard, Staten Island
- 470 A West 43rd Street, Manhattan
- 171C Auburn Avenue, Staten Island
- 20-29 Garage 120th Street, Queens

Queens House Numbers

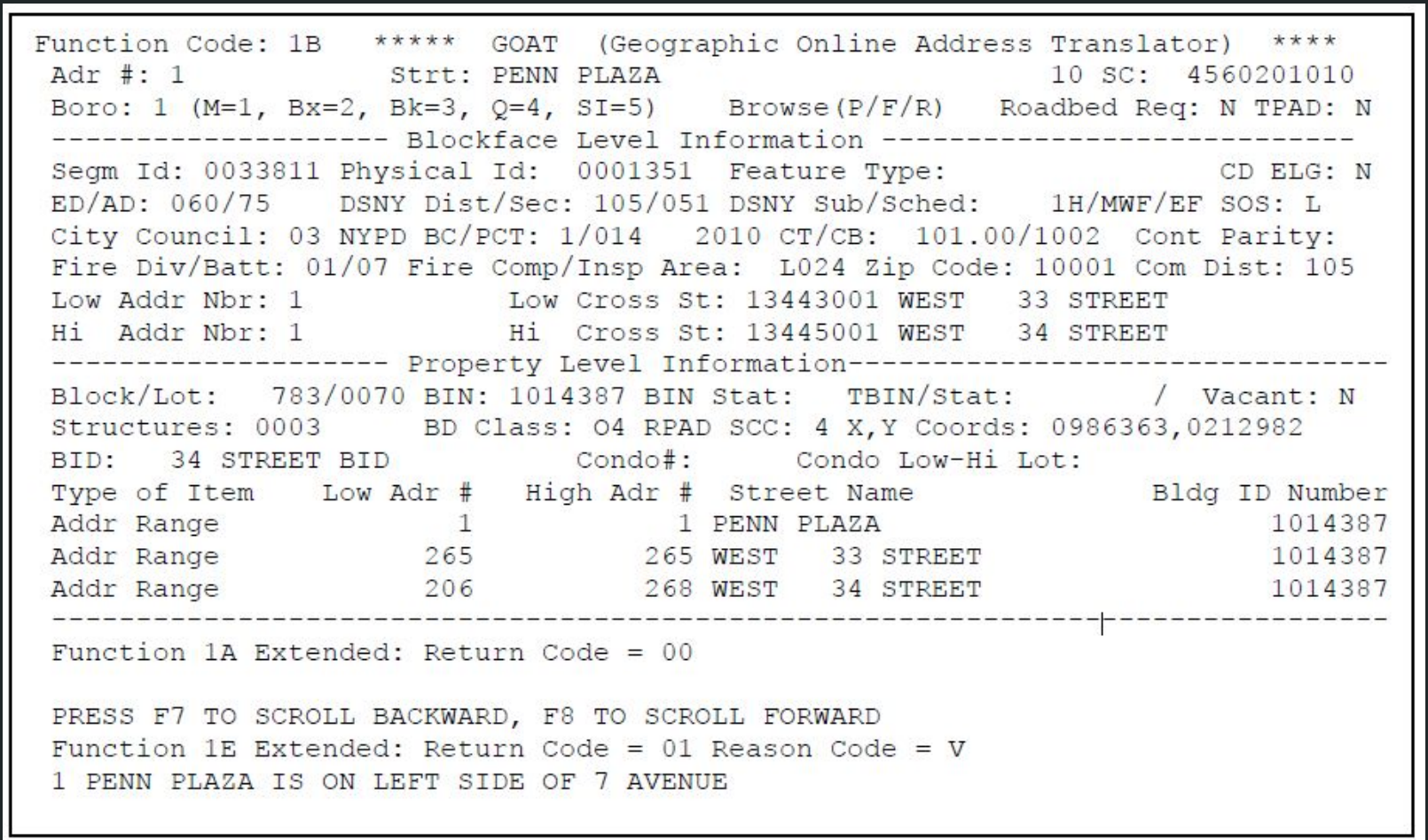
What is Geoclient?

Geo**client** is…just this part?!

“But sir, it’s only a wafer-thin mint!”

Uh...yeah.

Not using Geoclient



Sample Mainframe GOAT Function 1B Screen

```
*************************************************************************  00010010
**** THIS IS THE COBOL STRUCTURE FOR GEOSUPPORT SYSTEM PLATFORM ***      00020010
**** INDEPENDENT WORK AREA 1.                                    ***      00030010
**** COPY FILE - P1COB.                          04/07/98       ***      00040010
*************************************************************************  00050010
****                INPUT FIELDS                                 ****     00060010
*************************************************************************  00070010
         05  PIWA1-IN-FUNC-CODE                  PIC X(2).                00080010
         05  GEO-WA1-IN-FUNCTION-CODE REDEFINES PIWA1-IN-FUNC-CODE.       00090010
            10  GEO-WA1-IN-FUNCTION-1            PIC X.                   00100010
            10  GEO-WA1-IN-FUNCTION-2            PIC X.                   00110010
         05  PIWA1-IN-HOUSENUM-DISPLAY           PIC X(16).               00120010
         05  GEO-WA1-IN-HOUSENUM-DISPLAY REDEFINES                        00130010
             PIWA1-IN-HOUSENUM-DISPLAY.                                   00140010
           10  GEO-WA1-IN-HOUSENUM               PIC X(12).               00150010
           10  FILLER                            PIC X(4).                00160010
         05  PIWA1-IN-HOUSENUM-SORT              PIC X(11).               00170010
         05  PIWA1-IN-LOW-HOUSENUM-DISPLAY       PIC X(16).               00180010
         05  GEO-WA1-IN-LO-HOUSENUM-DISPLAY REDEFINES                     00190010
             PIWA1-IN-LOW-HOUSENUM-DISPLAY.                               00200010
           10  GEO-WA1-IN-LOW-HOUSENUM           PIC X(12).               00210010
           10  FILLER                            PIC X(4).                00220010
         05  PIWA1-IN-LOW-HOUSENUM-SORT          PIC X(11).               00230010
         05  GEO-WA1-IN-10SC-1.                                           00240010
           10  GEO-WA1-IN-BORO                   PIC X.                   00250010
           10  PIWA1-IN-10SC-1                   PIC X(10).               00260010
         05  GEO-WA1-IN-STREET-1                 PIC X(32).               00270010
         05  GEO-WA1-IN-10SC-2.                                           00280010
           10  GEO-WA1-IN-BORO-2                 PIC X.                   00290010
           10  PIWA1-IN-10SC-2                   PIC X(10).               00300010
         05  GEO-WA1-IN-STREET-2                 PIC X(32).               00310010
         05  GEO-WA1-IN-10SC-3.                                           00320010
           10  GEO-WA1-IN-BORO-3                 PIC X.                   00330010
           10  PIWA1-IN-10SC-3                   PIC X(10).               00340010
         05  GEO-WA1-IN-STREET-3                 PIC X(32).               00350010
         05  GEO-WA1-IN-BBL.                                              00360010
            10  GEO-WA1-IN-BL-BORO               PIC X.                   00370010
            10  GEO-WA1-IN-BLOCKNUM              PIC X(5).                00380010
            10  GEO-WA1-IN-LOTNUM                PIC X(5).                00390010
         05  PIWA1-IN-BIN                        PIC X(7).                00400010
```

COBOL API

C API

```
while (fread(&recin,1,sizeof(recin),inpdat))
 {

 /*****************************************************************/
 /* TO MAKE A FUNCTION 1 CALL:                                    */
 /*    (1) INITIALIZE WORKAREA 1 TO SPACES                        */
 /*    (2) SET WA1'S FUNCTION CODE FIELD TO 1                     */
 /*    (3) MOVE THE INPUT BORO TO WA1'S INPUT BORO CODE FIELD     */
 /*    (4) MOVE THE INPUT HOUSE NUMBER TO WA1'S INPUT HOUSE NUMBER */
 /*        FIELD                                                  */
 /*    (5) MOVE THE INPUT STREET TO WA1'S INPUT STREET NAME FIELD */
 /*    (6) CALL GBI WITH 2 WORKAREAS                              */
 /*    (7) CHECK RETURN CODES FOR ERRORS OR WARNINGS              */
 /*****************************************************************/

   memset(&wa1,' ',sizeof(wa1));
   memcpy(wa1.input.func_code,"1 ",2);
   wa1.input.sti??(0??).boro = recin.in_boro ;
   memcpy(wa1.input.sti??(0??).Street_name,recin.in_street_name,32);
          /* Please note that the house number field is actually */
          /* 16 bytes.  If you are only using 12 bytes, it is    */
          /* critical that you blank out the work area before    */
          /* you move in the house number                        */
   memcpy(wa1.input.hse_nbr_disp,recin.in_housenum,12);
   wa1.input.platform_ind = 'C';     /* Tells Geosupport that you */
                                     /* are using the character   */
/*
/* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * */
/*     As of Geosupport Version 10.1,                            */
/*     to receive roadbed-specific information,                  */
/*     set the Roadbed Request Switch to 'R', as follows:        */
/*     wa1.input.roadbedrequest = 'R';                           */
/*                                                               */
/* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * */
/*  */


   GBI(&wa1,&wa2_f1);

   if ( (memcmp(wa1.output.ret_code,"01",2)) > 0
   ||   (memcmp(wa1.output.ret_code,"00",2)) < 0 )
        /******** INSERT YOUR OWN ERROR HANDLING ROUTINE HERE *****/
    {
      printf("\n\n%c %.12s %.32s *** FUNCTION 1 GRC = %.2s"
```

Geosupport - Character Only Work Areas

```
73
74      BRONX     699           Q00699000AA21212001010BECK STREET
75  00000000000000                      00734720047269208440002OL000669000AAA                100743860064655
76
77      BRONX     1124          001124000AA           COLLAGE
78
79
80      BROOKLYN 961            000961000AA33843001010EASTERN PARKWAY
81  00000000000000                      00267560026801333280114OL000957000AAT                100486330041788
82
83      MANHATTAN                       11361001010BROADWAY
84
85
86      BRONX     645           000645000AA25032001010MELROSE AVENUE
87  00000000000000                      00430820043083246960030OL000643000AAT                100596360052001
88
89      MANHATTAN2950           002950000AA11361001010BROADWAY
90  00000000000000                      00239310023932107550540OR002940000AAT  1       0002504
91
92      BROOKLYN 4822           004822000AA30568001010    6 AVENUE
93  00000000000000                      00139260013925388280305OR004800000AAT                100365320031661
94
95      BROOKLYN 1581           001581000AA39083001010WEST    7 STREET
96  00000000000000                      00137330013729383960002OL001501000AAA                100627560054901
97
98      BROOKLYN 1581           001581000AA39083001010WEST    7 STREET
99  00000000000000                      00137330013729383960002OL001501000AAA                100627560054901
100
101     QUEENS    10422         010422000AA            104 ST    39 AVENUE
102
103
104     QUEENS    137-14        100137014AA41887001010   96 PLACE
105 00000000000000                      00319610031954460900002OR100137000AAT                100843360073354
106
107      MANHATTAN350            000350000AA13119001010ST NICHOLAS AVENUE
108  00000000000000                      00241730075230139600018 5R000340000AAT                100196800016612
109
~/Google Drive/Geoclient/gc-jni-buffer.log [unix] (14:30 04/03/2016)                          74,447  2%
```

Geosupport - Character Only Work Areas

```
73
74      BRONX     699             Q00699000AA21212001010BECK STREET
75  00000000000000                      0073472004726920844000020L000669000AAA                  100743860064655
76
77      BRONX     1124            001124000AA             COLLAGE
78
79
80      BROOKLYN 961              000961000AA33843001010EASTERN PARKWAY
81  00000000000000                      0026756002680133328011401000957000AAT                  100486330041788
82
83      MANHATTAN
84
85
86      BRONX     645             00
87  00000000000000                                                                              100596360052001
88
89      MANHATTAN2950             00
90  00000000000000                                                                              1        0002504
91
92      BROOKLYN 4822             00
93  00000000000000                                                                              100365320031661
94
95      BROOKLYN 1581             00
96  00000000000000                      0013733001372938396000020L001501000AAA                  100627560054901
97
98      BROOKLYN 1581             001581000AA39083001010WEST    7 STREET
99  00000000000000                      0013733001372938396000020L001501000AAA                  100627560054901
100
101     QUEENS    10422           0104 2000AA             ST   39 AVENUE
102
103
104     QUEENS    137-14          100137014AA41887001010   96 PLACE
105 00000000000000                      0031961003195446090000020R100137000AAT                  100843360073354
106
107      MANHATTAN350              000350000AA13119001010ST NICHOLAS AVENUE
108  00000000000000                      0024173007523013960000185R000340000AAT                  100196800016612
109
~/Google Drive/Geoclient/gc-jni-buffer.log [unix] (14:30 04/03/2016)                                74,447  2%
```

DEAL WITH IT

To the Interwebs!

City of New York

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Department of City Planning

Rudy Lopez - rlopez@planning.nyc.gov

GS questions - gss_feedback@planning.nyc.gov

Geoclient

GitHub
https://github.com/CityOfNewYork/geoclient

NYC Developer Portal https://developer.cityofnewyork.us/api/geoclient-api

Geosupport

GOAT
http://nyc.gov/goat

Geosupport
http://www1.nyc.gov/site/planning/data-maps/open-data.page#geocoding_application