NYSDOT Right of Way Database Creation

NY GEOCON
October 19, 2017
Matthew Palmer, PLS

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Project Summary

NYSDOT Region 3

- 6 Counties
- 1,700 miles of highway records

Objectives

- Georeferenced record search utility
- Leverage existing electronic files
- Minimal labor
- Easy to maintain

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Project Steps

1. **Legacy acquisitions**
    1. Georeference and digitize key maps
    2. Add attributes to parcels
    3. Link features to scanned image
2. **New acquisitions**
    1. Develop parcels in InRoads
    2. Run custom script tool

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Legacy Acquisitions

- Most maps scanned
- Existing Excel database
- Complicated naming system
- Path to existing images

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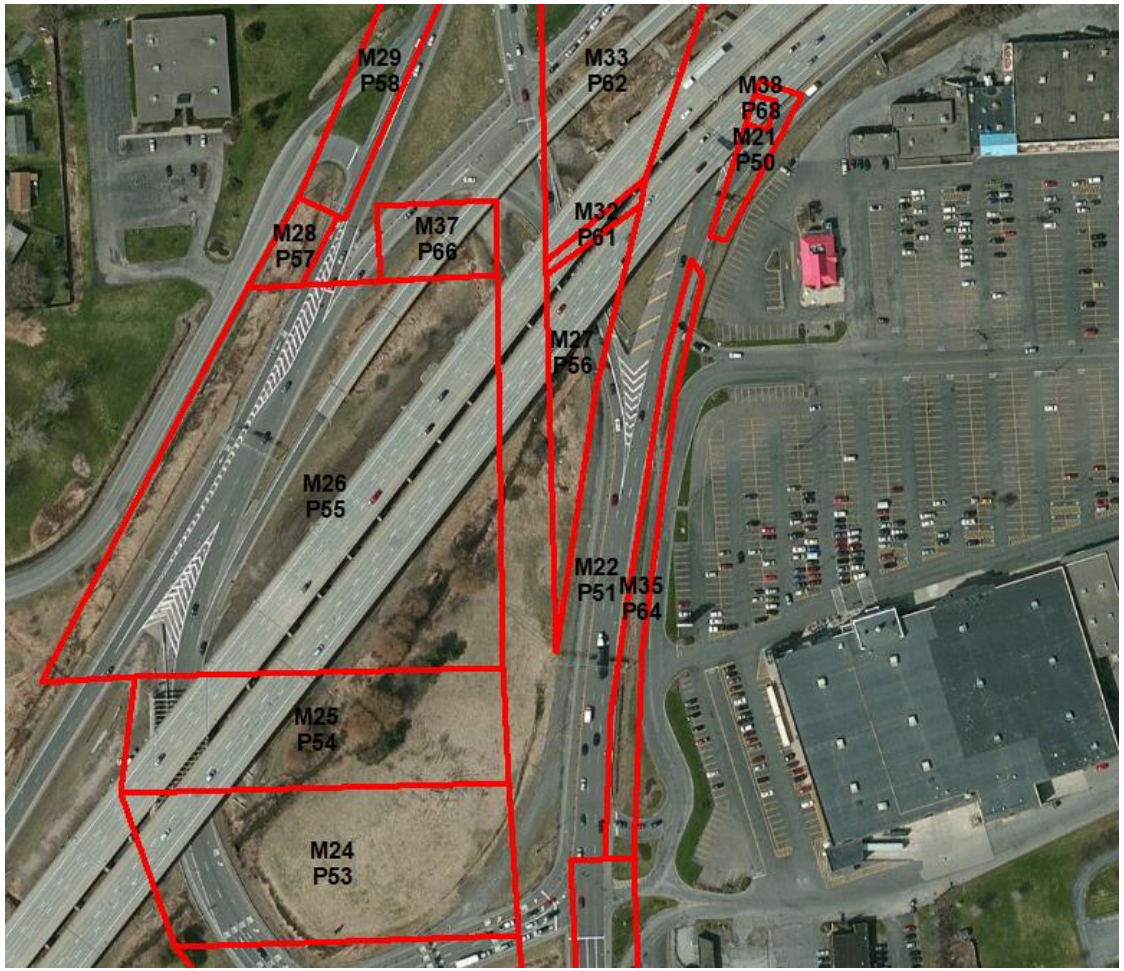
Digitize Key Maps



Add Attributes to Parcels

Table

5470_ACQ

FID	Shape *	COUNTY	SH_NUM	MUNI	MAP	PARCEL	OWNER	ACQ_TYPE	YEAR	GIS_ID
0	Polygon	ONONDAG	5470	SALINA	0.1R1A		SYRACUSE	ROW	1929	54700.1R1A
1	Polygon	ONONDAG	5470	SALINA	0.1R1B		SYRACUSE	ROW	1929	54700.1R1B
2	Polygon	ONONDAG	5470	SALINA	7	30	ONONDAGA	FEE	0	5470730
3	Polygon	ONONDAG	5470	SALINA	11	36	SALINA	PE	0	54701136
4	Polygon	ONONDAG	5470	SALINA	12	37	WHIPPLE	PE	0	54701237
5	Polygon	ONONDAG	5470	SALINA	16	43	SOUTHERN	TE	0	54701643
6	Polygon	ONONDAG	5470	SALINA	0.2		HARRINGTON	ROW	1928	54700.2
7	Polygon	ONONDAG	5470	SALINA	14	40	ONONDAGA	PE	0	54701440
8	Polygon	ONONDAG	5470	SALINA	13	38	SYRACUSE	FEE	0	54701338
9	Polygon	ONONDAG	5470	SALINA	10	34	SYRACUSE	TE	0	54701034
10	Polygon	ONONDAG	5470	SALINA	15	41	SKIFF	FEE	0	54701541
11	Polygon	ONONDAG	5470	SALINA	15	42	SKIFF	FEE	0	54701542
12	Polygon	ONONDAG	5470	SALINA	10	35	SYRACUSE	TE	0	54701035
13	Polygon	ONONDAG	5470	SALINA	13	39	SYRACUSE	FEE	0	54701339
14	Polygon	ONONDAG	5470	SALINA	17	44	ALBANESE	FEE	0	54701744
15	Polygon	ONONDAG	5470	SALINA	6	22	ONONDAGA	FEE	0	5470622
16	Polygon	ONONDAG	5470	SALINA	7	2	ONONDAGA	FEE	0	5470731
17	Polygon	ONONDAG	5470	SALINA	6	23	ONONDAGA	FEE	0	5470623
18	Polygon	ONONDAG	5470	SALINA	6	24	ONONDAGA	FEE	0	5470624
19	Polygon	ONONDAG	5470	SALINA	6	25	ONONDAGA	FEE	0	5470625
20	Polygon	ONONDAG	5470	SALINA	6	26	ONONDAGA	FEE	0	5470626
21	Polygon	ONONDAG	5470	SALINA	6	27	ONONDAGA	FEE	0	5470627
22	Polygon	ONONDAG	5470	SALINA	44	76	TREMARCO	FEE	0	54704476
23	Polygon	ONONDAG	5470	SALINA	36	65	PAPPALARDO	TE	0	54703665
24	Polygon	ONONDAG	5470	SALINA	18	47	PAPPALARDO	FEE	0	54701847
25	Polygon	ONONDAG	5470	SALINA	20	49	COIR	TE	0	54702049
26	Polygon	ONONDAG	5470	SALINA	19	48	COIR	FEE	0	54701948
27	Polygon	ONONDAG	5470	SALINA	6	28	ONONDAGA	FEE	0	5470628
28	Polygon	ONONDAG	5470	SALINA	38	67	WINKELMAN	FEE	0	54703867
29	Polygon	ONONDAG	5470	SALINA	6	29	ONONDAGA	FEE	0	5470629
30	Polygon	ONONDAG	5470	SALINA	22	51	MICHAELS	FEE	0	54702251
31	Polygon	ONONDAG	5470	SALINA	23	52	VALERIO	FEE	0	54702352
32	Polygon	ONONDAG	5470	SALINA	24	53	VALERIO	FEE	0	54702453
33	Polygon	ONONDAG	5470	SALINA	25	54	VALERIO	FEE	0	54702554
34	Polygon	ONONDAG	5470	SALINA	26	55	ROEHM	FEE	0	54702655
35	Polygon	ONONDAG	5470	SALINA	28	57	MOREY	FEE	0	54702857
36	Polygon	ONONDAG	5470	SALINA	29	58	MOREY	FEE	0	54702958
37	Polygon	ONONDAG	5470	SALINA	30	59	ILES	FEE	0	54703059
38	Polygon	ONONDAG	5470	SALINA	31	60	WARD	FEE	0	54703160
39	Polygon	ONONDAG	5470	SALINA	43	75	KLASY	FEE	0	54704375
40	Polygon	ONONDAG	5470	SALINA	42	74	REILLY	FEE	0	54704274

1 (0 out of 82 Selected)

5470_ACQ

Link Features to Scanned Image

Custom script tool

Attribute Table

Table

5470_ACQ

FID	Shape *	COUNTY	SH_NUM	MUNI	MAP	PARCEL	OWNER	ACQ_TYPE	YEAR	GIS_ID
0	Polygon	ONONDAG	5470	SALINA	0.1R1A		SYRACUSE	ROW	1929	54700.1R1A
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4	Polygon	ONONDAG	5470	SALINA	12	37	WHIPPLE	PE	0	54701237
5	Polygon	ONONDAG	5470	SALINA	16	43	SOUTHERN	TE	0	54701643
6	Polygon	ONONDAG	5470	SALINA	0.2		HARRINGTON	ROW	1928	54700.2
7	Polygon	ONONDAG	5470	SALINA	14	40	ONONDAGA	PE	0	54701440
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9	Polygon	ONONDAG	5470	SALINA	10	34	SYRACUSE	TE	0	54701034
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16	Polygon	ONONDAG	5470	SALINA	7	2	ONONDAGA	FEE	0	5470731
17	Polygon	ONONDAG	5470	SALINA	6	23	ONONDAGA	FEE	0	5470623
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19	Polygon	ONONDAG	5470	SALINA	6	25	ONONDAGA	FEE	0	5470625
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22	Polygon	ONONDAG	5470	SALINA	44	76	TREMARCO	FEE	0	54704476
23	Polygon	ONONDAG	5470	SALINA	36	65	PAPPALARDO	TE	0	54703665
24	Polygon	ONONDAG	5470	SALINA	18	47	PAPPALARDO	FEE	0	54701847
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30	Polygon	ONONDAG	5470	SALINA	22	51	MICHAELS	FEE	0	54702251
31	Polygon	ONONDAG	5470	SALINA	23	52	VALERIO	FEE	0	54702352
32	Polygon	ONONDAG	5470	SALINA	24	53	VALERIO	FEE	0	54702453
33	Polygon	ONONDAG	5470	SALINA	25	54	VALERIO	FEE	0	54702554
34	Polygon	ONONDAG	5470	SALINA	26	55	ROEHM	FEE	0	54702655
35	Polygon	ONONDAG	5470	SALINA	28	57	MOREY	FEE	0	54702857
36	Polygon	ONONDAG	5470	SALINA	29	58	MOREY	FEE	0	54702958
37	Polygon	ONONDAG	5470	SALINA	30	59	ILES	FEE	0	54703059
38	Polygon	ONONDAG	5470	SALINA	31	60	WARD	FEE	0	54703160
39	Polygon	ONONDAG	5470	SALINA	43	75	KLASY	FEE	0	54704375
40	Polygon	ONONDAG	5470	SALINA	42	74	REILLY	FEE	0	54704274

1 (0 out of 82 Selected)

5470_ACQ

Excel File

C	D	E	F	J	K
COUNTY	MUNICIPALI	MAPNUI	PARCEL	LASTNAME	MAPTY
ONONDAGA	MARCELLUS	26	34	CLEMENT	ACQ
ONONDAGA	MARCELLUS	26R-1	34	MCMANUS	ACQ
ONONDAGA	MARCELLUS	27	35	RAMSDEN	ACQ
ONONDAGA	MARCELLUS	28	36	GULLIVER	ACQ
ONONDAGA	MARCELLUS	29	37	SHAY	ACQ
ONONDAGA	MARCELLUS	30	38	WARNER	ACQ
ONONDAGA	MARCELLUS	31	39	CLEMENT	ACQ
ONONDAGA	MARCELLUS	32	41	ONONDAGA	ACQ
ONONDAGA	MARCELLUS	33	42	MULDOON	ACQ
ONONDAGA	MARCELLUS	34	43	O'MALLEY	ACQ
ONONDAGA	MARCELLUS	35	44	UNKNOWN	ACQ
ONONDAGA	MARCELLUS	36	45 46	MARCELLUS	ACQ
ONONDAGA	MARCELLUS	37	47	ONONDAGA	ACQ
ONONDAGA	MARCELLUS	37R-1	47	ONONDAGA	ACQ
ONONDAGA	MARCELLUS	38	48	WILSON	ACQ
ONONDAGA	MARCELLUS	39	49	ONONDAGA	ACQ
ONONDAGA	MARCELLUS	40	50	MCDONALD	ACQ
ONONDAGA	MARCELLUS	41	51 52	WHITFIELD	ACQ
ONONDAGA	MARCELLUS	42	55 56 57	CROWN	ACQ
ONONDAGA	MARCELLUS	43	58	WILSON	ACQ
ONONDAGA	MARCELLUS	44	59	WHITFIELD	ACQ
ONONDAGA	MARCELLUS	45	53 54	WHITFIELD	ACQ
ONONDAGA	MARCELLUS	46	55 56	LOSS	ACQ
ONONDAGA	MARCELLUS	47	57	LOSS	ACQ
ONONDAGA	MARCELLUS	48	58	PUFFETT	ACQ
ONONDAGA	MARCELLUS	49	59 60 61	ONONDAGA	ACQ
ONONDAGA	MARCELLUS	50	63 64	ONONDAGA	ACQ
ONONDAGA	MARCELLUS	51	65 66 67 68 69	STRICKLAND	ACQ
ONONDAGA	MARCELLUS	52	70 71	STRICKLAND	ACQ

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Link Features to Scanned Image

County Name / CDNum / FIRSTIMAGE

Excel File

	L	N	P
TY	CDNUM	FIRSTIMAGE	LASTIMAGEN
	31002	3101090	3101090
	31002	3101089	3101089
	31002	3101091	3101091
	31002	3101092	3101092
	31002	3101093	3101093
	31002	3101094	3101094
	31002	3101095	3101095
	31002	3101096	3101097
	31002	3101098	3101098
	31002	3101099	3101099
	31002	3101100	3101100
	31002	3101101	3101101
	31002	3101103	3101103
	31002	3101102	3101102
	31002	3101104	3101104
	31002	3101105	3101105
	31002	3101106	3101106
	31002	3101107	3101108
	31002	3101109	3101110

Attribute Table

LINK	SHEETS
	0
	0
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P:/Real Estate Maps/03/ROW ACQUISITON MAPS_RC/31_ONONDAGA/31_002/3101797.tif	1
P:/Real Estate Maps/03/ROW ACQUISITON MAPS_RC/31_ONONDAGA/31_002/3101798.tif	1
P:/Real Estate Maps/03/ROW ACQUISITON MAPS_RC/31_ONONDAGA/31_002/3101802.tif	1
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P:/Real Estate Maps/03/ROW ACQUISITON MAPS_RC/31_ONONDAGA/31_002/3101800.tif	1
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P:/Real Estate Maps/03/ROW ACQUISITON MAPS_RC/31_ONONDAGA/31_002/3101803.tif	1
P:/Real Estate Maps/03/ROW ACQUISITON MAPS_RC/31_ONONDAGA/31_002/3101789.tif	3

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New Acquisitions

- .DGN file provided by consultant
- Create shapefile from .DGN file
- Automatically add attribute data

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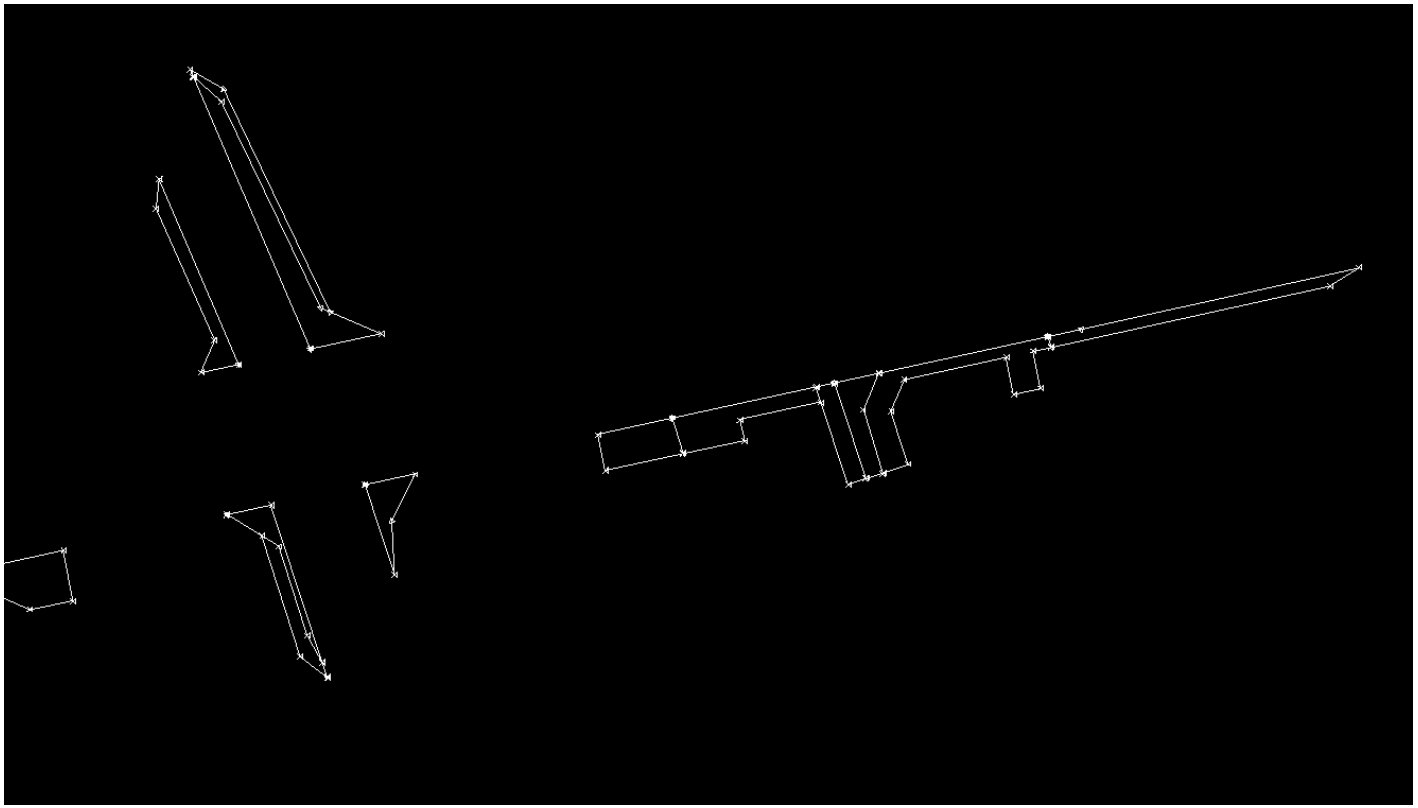
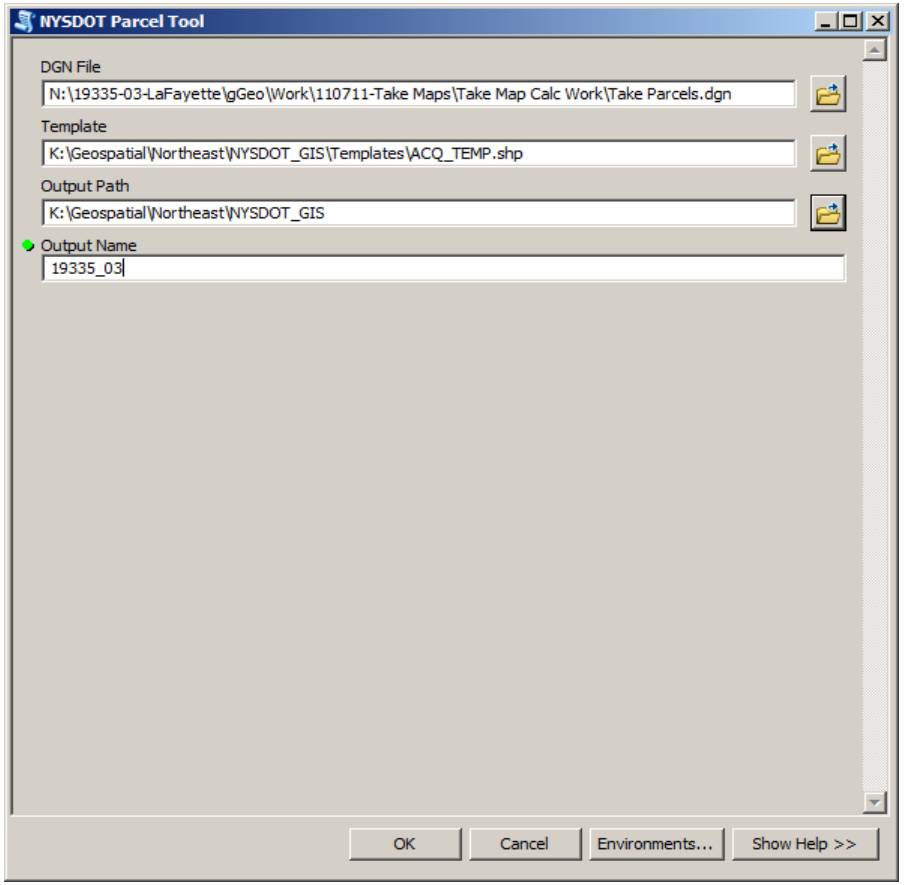
.DGN File Provided by Consultant



Create Shapefile From .DGN

```
#This tool takes a Microstation .DGN file and creates a polygon
#shapefile using a template that was set up by the NYSDOT

import arcpy
arcpy.env.workspace = "U:\\PalmerM\\NYSDOT_GIS\\Templates"
#Set parameters
input = arcpy.GetParameterAsText(0)
outPath = arcpy.GetParameterAsText(1)
outputName = arcpy.GetParameterAsText(2)
inputParcel = input + "\\Polygon"

#Set variables
outputNameString = outputName + ".shp"
selectField = "Layer"
selection = "MHA"
string = '"' + selectField + '" = ' + "'" + selection + "'"
template = "ACQ_TEMP.shp"
sr = arcpy.SpatialReference(2261)
UTM = arcpy.Describe(template).spatialReference
nameList = []
nameField = "name"

try:
    #Define projection for the input DGN file
    arcpy.DefineProjection_management(input, sr)

    #Make a feature layer called tempLyr
    arcpy.MakeFeatureLayer_management(inputParcel, "tempLyr")

    #Select by attributes using the determined string
    arcpy.SelectLayerByAttribute_management("tempLyr", "NEW_SELECTION", string)

    #Set list variables
    nameList = []
    mapList = []
    parcelList = []
    newParcelList = []
    newMapList = []
    count = 0
```



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Conclusion

Maintenance

- Quality control
- Master file and backup

Consideration for future

- Merge with existing GIS databases
- Add supplemental records
- Custom search UI for consultants