Order To The Chaos – Indexing Sonoma County Streets

County Of Sonoma
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Presented By:

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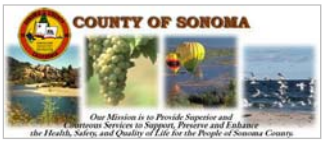


Overview of Presentation

Quick background on the Fire Run Book Project

- Funding
- Purpose
- Benefits
- Elements of the Run Book
- Grid Configuration

The Street Index

- Elements of Street Index
- Benefits /Purpose of Index
- Goals
- Street Layer Challenges
- Required Data Layers
- Analysis Tools

Overview of Presentation

The Search for The Out of the Box Solution

- What we did
- Why it didn't work

Custom Solutions

- Three Evolutions of One Solution
- What worked
- What didn't work
- What we learned
- Focus for improvement

Conclusion

What is the Countywide Fire Run Book?

Funding

- Homeland Security Grants

Participants

- 41 Fire Agencies
- Sonoma County Cities
- Sonoma County GIS Central

What is the Countywide Fire Run Book?

Purpose and Benefits

- Standardization of Maps
- Data used in both printed Run Books and dispatch system
- To be used by local and outside agencies
- Easily updated

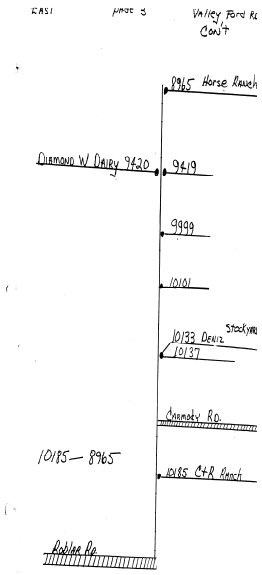
Elements of Run Books

- Index Map
- Legend
- Street Index
- Map Pages

What is the Countywide Fire Run Book?

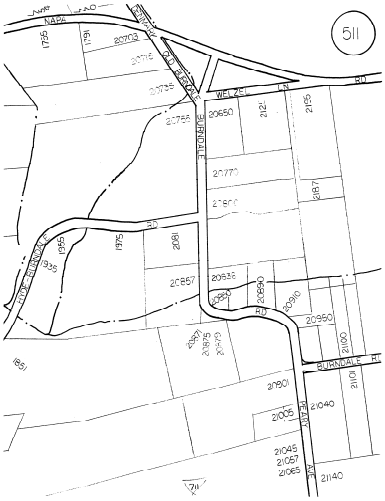
Sample Pages of Previous Fire Run Books –

Bloomfield VFC



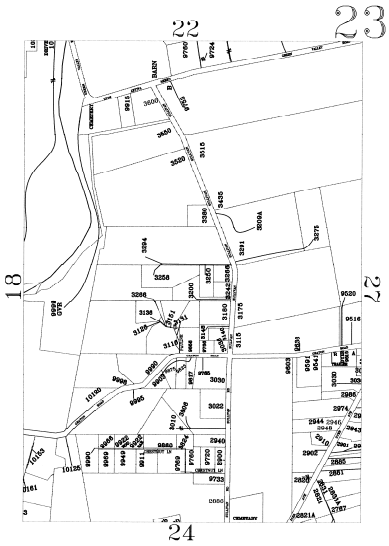
What is the Countywide Fire Run Book?

Schell-Vista FPD



What is the Countywide Fire Run Book?

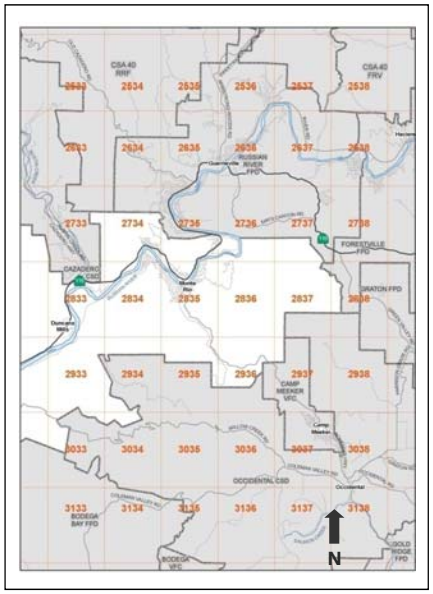
Graton FPD



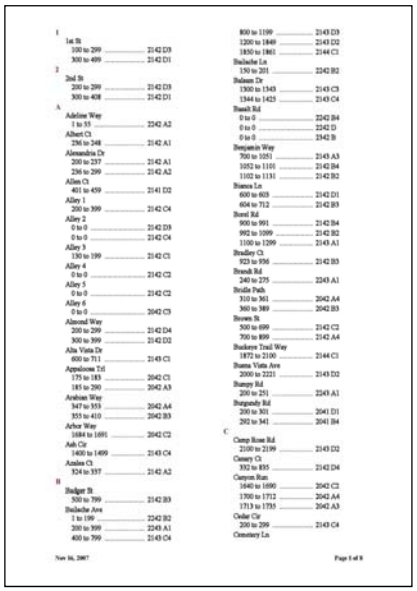
What is the Countywide Fire Run Book?

What is the Countywide Fire Run Book?

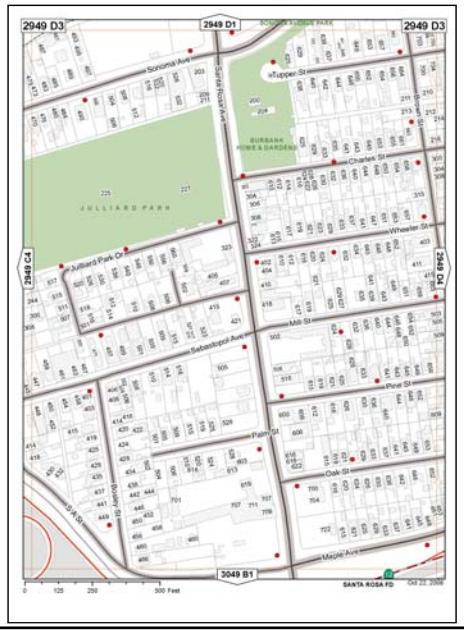
What is the Countywide Fire Run Book?

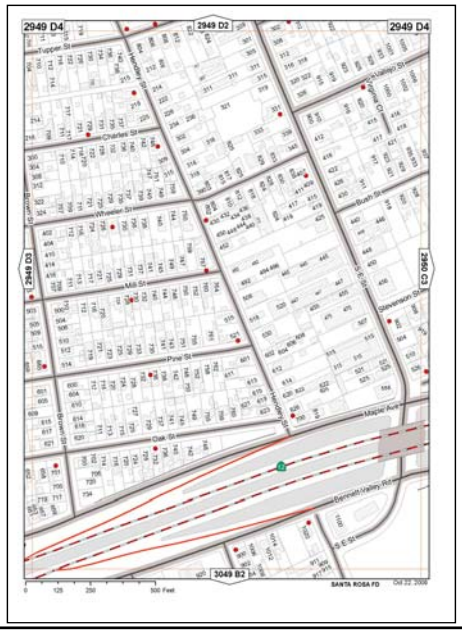


What is the Countywide Fire Run Book?



What is the Countywide Fire Run Book?





What is the Street Index?

Elements of Street Index

- Street name
- Ranges with associated grid tile
- Table of Contents style

Benefits/Purpose

- Quick reference
- Used by dispatchers / outside agencies
- Available in Emergency Operations Center (EOC) for large scale disasters

Goals for Street Index

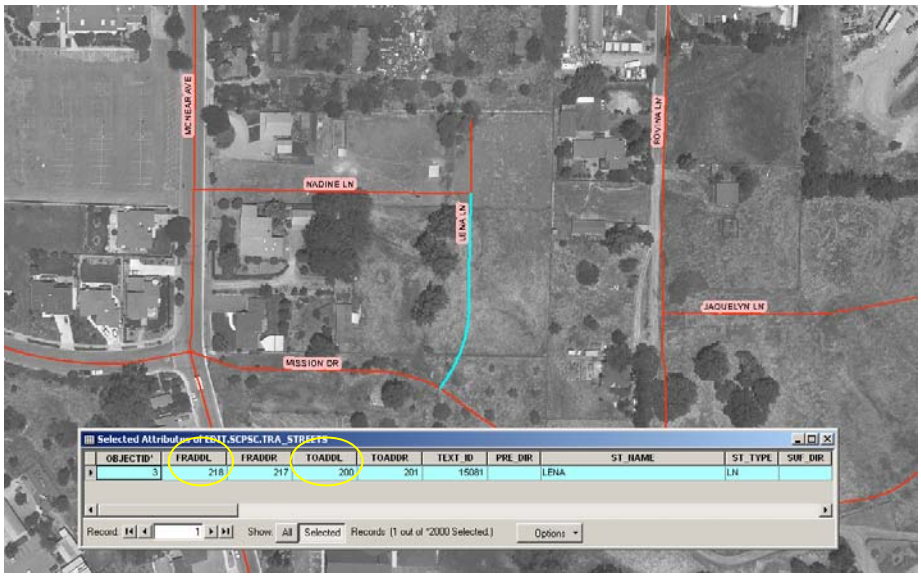
- Represent street ranges as accurately as possible
- Manage difficulties of Sonoma County streets as cleanly as possible

What is the Street Index?

Street Layer Challenges

- One Way Streets
- Backward ranges

Challenges of the Street Index



Challenges of the Street Index

What is the Street Index?

Layers Used

- Streets
- Grid with associated Fire Districts

ArcGIS Tools Used

- Feature to Point
- Analysis Toolset / Intersect

Other Software Used

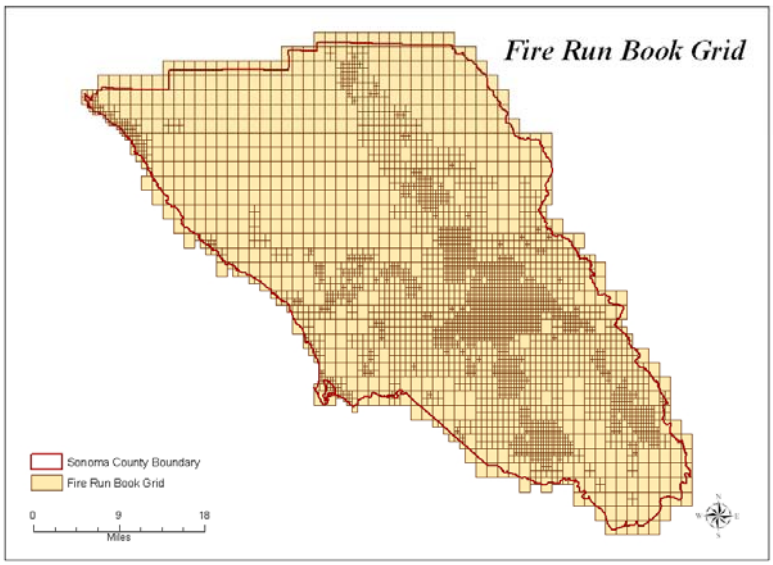
- Visual Basic Programming
- Microsoft Access Formatting

What is the Street Index?

Grid

- Key component to Run Book and street index
- Tiles of different scales overlay entire county
- Tiles for various Fire Agencies overlap at district boundaries
- Map page numbers based on row and column of grid

What is the Street Index?



The Search for an Out of the Box Solution

Internet Search

- ESRI Support
- General Search

What we found

- Create Index Macro
- Works in conjunction with map series created with Map Book Developer Sample

Why it didn't work

- Grid layout / numbering substantially different
- Did not capture street ranges
- Not automatic
- Did not match our needs

Custom Solutions

3 Phases of Evolution

4 Step approach in each Phase

- Step 1 – Original Extract with street range information
- Step 2 – Condense continuous street ranges
- Step 3 – Check map for Legitimate Gaps Vs Leaps in Range
- Step 4 – Format the Street Index

Efficiency in executing steps improved with each phase

Custom Solutions – Phase I

The Pilot Project – Healdsburg FPD

Layers used

- Streets
- Grid

Description of Process

Step 1 – Extract Of Street Range Info

- Intersect streets layer and grid
- Keep relevant fields
- Convert to Coverage using SHAPEARC in ArcInfo Workstation
- Use ADDRESSCREATE command to create address table

Custom Solution – Phase I

PRE_DIR	ST_NAME	ST_TYPE	SUF_DIR	FRADDL	FRADDR	TOADDL	TOADDR	TILE
	1ST	ST		101	100	199	198	2142D3
	1ST	ST		201	200	219	218	2142D3
	1ST	ST		221	220	299	298	2142D3
	1ST	ST		301	300	399	398	2142D3
	1ST	ST		301	300	399	398	2142D1
	1ST	ST		401	400	499	498	2142D1
	2ND	ST		0	400	0	408	2142D1
	2ND	ST		200	201	218	219	2142D3
	2ND	ST		220	221	298	299	2142D3
	2ND	ST		300	301	398	399	2142D3
	2ND	ST		300	301	398	399	2142D1
	ADELINE	WAY		1	2	25	26	2242A2
	ADELINE	WAY		27	28	55	54	2242A2
	ADELINE	WAY		27	28	55	54	2142C4
	ALBERT	CT		237	236	247	248	2142A1
	ALBERT	CT		237	236	247	248	2142A2
	ALEXANDER VALLEY	RD		101	100	151	150	2042A2
	ALEXANDRIA	DR		201	200	229	226	2142A1
	ALEXANDRIA	DR		231	228	237	234	2142A1
	ALEXANDRIA	DR		239	236	249	250	2142A1
	ALEXANDRIA	DR		239	236	249	250	2142A2
	ALEXANDRIA	DR		251	252	299	298	2142A2
	ALLEN	CT		401	0	459	0	2142C3
	ALLEN	CT		401	0	459	0	2142C1
	ALLEN	CT		401	0	459	0	2141D2
	ALLEY 1			201	200	299	298	2142C4
	ALLEY 1			301	300	399	398	2142C4
	ALLEY 1			301	300	399	398	2142D3
	ALLEY 2			0	0	0	0	2142D3
	ALLEY 2			0	0	0	0	2142C4
	ALLEY 2			0	0	0	0	2142D3
	ALLEY 3			131	130	199	198	2142C3
	ALLEY 3			131	130	199	198	2142C1
	ALLEY 3			131	130	199	198	2142C2
	ALLEY 4			0	0	0	0	2142C1
	ALLEY 4			0	0	0	0	2142C2

Custom Solution – Phase I

PRE_DIR	STREET_NAM	STREET_TYP	SUF_DIR	F_ADD	T_ADD	TILE
	1ST	ST		100	198	2142D1
	1ST	ST		101	199	2141D2
	1ST	ST		200	218	2142C1
	1ST	ST		201	219	2142C3
	1ST	ST		220	298	2142C4
	1ST	ST		221	299	2142C4
	1ST	ST		300	398	2142D3
	1ST	ST		300	398	2142D3
	1ST	ST		301	399	2142D3
	1ST	ST		301	399	2142D3
	1ST	ST		400	498	2142C1
	1ST	ST		401	499	2142C1
	2ND	ST		0	0	2142C2
	2ND	ST		200	218	2142C2
	2ND	ST		201	219	2142C2
	2ND	ST		220	298	2142C2
	2ND	ST		221	299	2142D1
	2ND	ST		300	398	2142D1
	2ND	ST		300	398	2042C3
	2ND	ST		301	399	2042C3
	2ND	ST		301	399	2042C3
	2ND	ST		400	408	2042C3
	ADELINE	WY		1	25	2142A1
	ADELINE	WY		2	26	2142A1
	ADELINE	WY		27	55	2042A3
	ADELINE	WY		27	55	2042A3
	ADELINE	WY		28	54	2042C1
	ADELINE	WY		28	54	2042A4
	ALBERT	CT		236	248	2042B3
	ALBERT	CT		236	248	2042B3
	ALBERT	CT		237	247	2242B2

Custom Solutions – Phase I

Description of Process

Step 2

- Manually consolidate street ranges

Step 3

- Check map for Legitimate Gaps Vs Leaps in Range

Step 4

- Format the Street Index

Custom Solution – Phase I

Pre Direction	Street Name	Street Type	Suffix Direction	From	To	Tile
	1ST	ST		100	399	2142D3
	1ST	ST		300	499	2142D1
	2ND	ST		0	0	2142D1
	2ND	ST		200	299	2142D3
	2ND	ST		300	399	2142D1
	2ND	ST		300	399	2142D3
	2ND	ST		400	408	2142D1
	ADELINE	WY		1	55	2242A2
	ADELINE	WY		27	55	2142C4
	ALBERT	CT		236	248	2142A1
	ALBERT	CT		236	248	2142A2
	ALEXANDER VALLEY	RD		100	151	2042A2
	ALEXANDRIA	DR		200	250	2142A1
	ALEXANDRIA	DR		236	299	2142A2
	ALLEN	CT		0	0	2141D2
	ALLEN	CT		0	0	2142C1
	ALLEN	CT		0	0	2142C3
	ALLEN	CT		401	459	2141D2
	ALLEN	CT		401	459	2142C1
	ALLEN	CT		401	459	2142C3
	ALLEY 1			200	399	2142C4
	ALLEY 1			300	399	2142D3
	ALLEY 2			0	0	2142C4
	ALLEY 2			0	0	2142D3

Phase I - Final Product

What did work

- Street Index was produced
- Street Ranges were consolidated

What didn't work

- Manual approach was insane
- Number of pages for each agency (HUGE!)
- Some agencies would be too large to consolidate manually
  - Rincon Valley
  - Santa Rosa
- Appearance / readability not optimal

Pilot Project - Final Product

What we learned

- We would need an army to finish the task
- The idiosyncrasies of the streets layer
  - Backward Ranges
  - One Way Streets
  - Legitimate Gaps vs. Leaps in Range
- Programming necessary to consolidate ranges

Focus for Improvement

Step 2 - Automating continuous range consolidation

Step 3 - Gap checking

Step 4 - Formatting

Custom Solutions – Phase II

Version I – Fire Run Book

4 Step approach

- Step 1 – Original Extract with street range information
- Step 2 – Condense continuous street ranges
- Step 3 – Check map for Legitimate Gaps Vs Leaps in Range
- Step 4 – Format the Street Index

Layers used

- Streets
- Grid

Custom Solutions – Phase II

Description of Process

Step 1 - Extract with street range information

- Intersect streets layer and grid
- Keep relevant fields
- Convert to Coverage using SHAPEARC in ArcInfo Workstation
- Use ADDRESSCREATE command to create address table

Process identical to Phase I

Custom Solution – Phase II

Example of Step I Extract

ID	AGENCY	TILE	STREETNAME	LOW	HIGH
15505	ANNAPOLIS VFC	1219	ROCKPILE RD	0	0
16719	ANNAPOLIS VFC	1220	ROCKPILE RD	0	0
17125	ANNAPOLIS VFC	1320	ROCKPILE RD	0	0
17002	ANNAPOLIS VFC	1321	ROCKPILE RD	0	0
17001	ANNAPOLIS VFC	1321	ROCKPILE RD	0	0
15027	ANNAPOLIS VFC	1323	ROCKPILE RD	19868	19915
15026	ANNAPOLIS VFC	1323	ROCKPILE RD	19916	19939
15025	ANNAPOLIS VFC	1323	ROCKPILE RD	19940	19955
13679	ANNAPOLIS VFC	1323	ROCKPILE RD	19956	19963
13677	ANNAPOLIS VFC	1323	ROCKPILE RD	19964	19977
13681	ANNAPOLIS VFC	1323	ROCKPILE RD	19978	19985
13682	ANNAPOLIS VFC	1323	ROCKPILE RD	19986	20001
13685	ANNAPOLIS VFC	1323	ROCKPILE RD	20002	20013
13683	ANNAPOLIS VFC	1323	ROCKPILE RD	20014	20025
13680	ANNAPOLIS VFC	1323	ROCKPILE RD	20026	20035
13678	ANNAPOLIS VFC	1323	ROCKPILE RD	20036	20053
13684	ANNAPOLIS VFC	1323	ROCKPILE RD	20054	20075
15008	ANNAPOLIS VFC	1324	ROCKPILE RD	19838	19855
15007	ANNAPOLIS VFC	1324	ROCKPILE RD	19856	19867
15100	ANNAPOLIS VFC	1419	KELLY RD	23858	23903
13776	ANNAPOLIS VFC	1419	KELLY RD	23904	23915
13774	ANNAPOLIS VFC	1419	KELLY RD	23916	23955
13772	ANNAPOLIS VFC	1419	KELLY RD	23956	23999
13775	ANNAPOLIS VFC	1419	KELLY RD	24000	24035
13777	ANNAPOLIS VFC	1419	KELLY RD	24036	24057
13780	ANNAPOLIS VFC	1419	KELLY RD	24058	24079
13779	ANNAPOLIS VFC	1419	KELLY RD	24080	24103
13781	ANNAPOLIS VFC	1419	KELLY RD	24104	24121
13778	ANNAPOLIS VFC	1419	KELLY RD	24122	24145

Custom Solutions – Phase II

Description of Process

Step 2 - Condense continuous street ranges

- Import spreadsheet into MsAccess table
  ~ 65,000 rows
- Make separate table for each agency
- Run each table through Visual Basic program
  connects to MsAccess Database
- Logic
  Sort table on TILE, ST NAME, LOW and HIGH
  Create TEMP table to store street info in the same tile
  Traverse the table and condense continuous ranges
- Result in 2 tables
  Condensed Table (Main Agency Table)
  Repeat Range Table

Custom Solutions – Phase II

Results – Output Table 1

Original extract with continuous ranges

ID	AGENCY	TILE	STREETNAME	LOW	HIGH
17002	ANNAPOLIS VFC	1321	ROCKPILE RD	0	0
17001	ANNAPOLIS VFC	1321	ROCKPILE RD	0	0
15027	ANNAPOLIS VFC	1323	ROCKPILE RD	19868	19915
15026	ANNAPOLIS VFC	1323	ROCKPILE RD	19916	19939
15025	ANNAPOLIS VFC	1323	ROCKPILE RD	19940	19955
13679	ANNAPOLIS VFC	1323	ROCKPILE RD	19956	19963
13677	ANNAPOLIS VFC	1323	ROCKPILE RD	19964	19977
13681	ANNAPOLIS VFC	1323	ROCKPILE RD	19978	19985
13682	ANNAPOLIS VFC	1323	ROCKPILE RD	19986	20001
13685	ANNAPOLIS VFC	1323	ROCKPILE RD	20002	20013
13683	ANNAPOLIS VFC	1323	ROCKPILE RD	20014	20025
13680	ANNAPOLIS VFC	1323	ROCKPILE RD	20026	20035
13678	ANNAPOLIS VFC	1323	ROCKPILE RD	20036	20053
13684	ANNAPOLIS VFC	1323	ROCKPILE RD	20054	20075
15008	ANNAPOLIS VFC	1324	ROCKPILE RD	19838	19855
15007	ANNAPOLIS VFC	1324	ROCKPILE RD	19856	19867

TILE	AGENCY	STREETNAME	LOW	HIGH
1321	ANNAPOLIS VFC	ROCKPILE RD	0	0
1323	ANNAPOLIS VFC	ROCKPILE RD	19868	20075
1324	ANNAPOLIS VFC	ROCKPILE RD	19838	19867

Condensed Table

Custom Solutions – Phase II

Results – Output Table 2

Repeat Range table – for manual check

TILE	STREETNAME
1625	STEWARTS POINT RD

TILE	AGENCY	STREETNAME	LOW	HIGH
1625	ANNAPOLIS VFC	STEWARTS POINT RD	41500	42183
1625	ANNAPOLIS VFC	STEWARTS POINT RD	42634	42673

Custom Solutions – Phase II

Description of Process – Step 3: Check street range gaps

Scenario 1: Streets that turn corners and change ranges in same tile

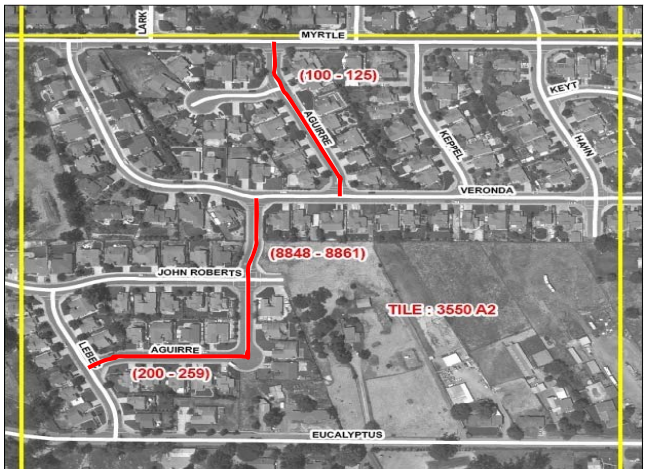
Repeat Range Table

TILE	STREETNAME
3550 A2	AGUIRRE WAY

Agency Table

TILE	AGENCY	STREETNAME	LOW	HIGH
3550 A2	ROHNERT PARK DPS	AGUIRRE WAY	100	125
3550 A2	ROHNERT PARK DPS	AGUIRRE WAY	200	259
3550 A2	ROHNERT PARK DPS	AGUIRRE WAY	8848	8861

Custom Solutions – Phase II



TILE	AGENCY	STREETNAME	LOW	HIGH
3550 A2	ROHNERT PARK DPS	AGUIRRE WAY	100	125
3550 A2	ROHNERT PARK DPS	AGUIRRE WAY	200	259
3550 A2	ROHNERT PARK DPS	AGUIRRE WAY	8848	8861

Custom Solutions – Phase II

Scenario 2 : Streets that run in and out of Tiles

Repeat Range Table

TILE	STREETNAME
3753 C2	RAINIER CIR

Agency Table

TILE	AGENCY	STREETNAME	LOW	HIGH
3753 C2	PETALUMA FD	RAINIER CIR	1701	1709
3753 C2	PETALUMA FD	RAINIER CIR	1900	1999

Custom Solution – Phase II

TILE	AGENCY	STREETNAME	LOW	HIGH
3753 C2	PETALUMA FD	RAINIER CIR	1701	1709
3753 C2	PETALUMA FD	RAINIER CIR	1900	1999

Custom Solutions – Phase II

Scenario 3: **Consolidation of Ranges**

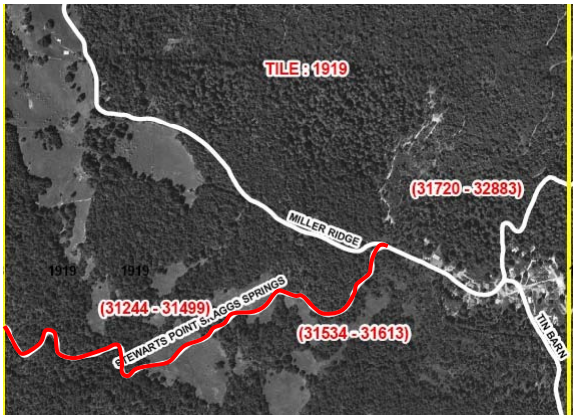
Repeat Range Table

TILE	STREETNAME
1919	STEWARTS POINT SKAGGS SPRINGS RD

Agency Table

TILE	AGENCY	STREETNAME	LOW	HIGH
1919	ANNAPOLIS VFC	STEWARTS POINT SKAGGS SPRINGS RD	31244	31499
1919	ANNAPOLIS VFC	STEWARTS POINT SKAGGS SPRINGS RD	31534	31613
1919	ANNAPOLIS VFC	STEWARTS POINT SKAGGS SPRINGS RD	31720	32883

Custom Solutions – Phase II



TILE	AGENCY	STREETNAME	LOW	HIGH
1919	ANNAPOLIS VFC	STEWARTS POINT SKAGGS SPRINGS RD	31244	32883

Custom Solutions – Phase II

Description of Process –

Step 4 - Format the Street Index

- Tables in Excel originally
- Brought into Microsoft Word
- Format style based on feedback from fire personnel

Custom Solution – Phase II

STREET NAME	LOW	HIGH	TILE
1st St	100	299	2142D3
1st St	300	499	2142D1
2nd St	200	299	2142D3
2nd St	300	408	2142D1
Albert Ct	236	248	2142A1
Alexandria Dr	200	237	2142A1
Alexandria Dr	236	299	2142A2
Alley 1	200	399	2142C4
Alley 2	0	0	2142C4
Alley 2	0	0	2142D3
Alley 3	130	199	2142C1
Alley 4	0	0	2142C2
Alley 5	0	0	2142C2
Alley 6	0	0	2042C3
Almond Way	300	399	2142D2
Alta Vista Dr	600	711	2143C1
Appaloosa Trl	175	183	2042C1
Azalea Ct	324	337	2142A2
Badger St	500	799	2142B3
Benjamin Way	700	1051	2143A3
Benjamin Way	1052	1101	2142B4
Bianca Ln	600	603	2142D1
Bianca Ln	604	712	2142B3
Borel Rd	900	991	2142B4
Bradley Ct	923	936	2142B3
Bridle Path	0	0	2042B3
Brown St	500	699	2142C2
Brown St	700	899	2142A4
Cemetery Ln	0	0	2142D1
Center St	330	699	2142C1
Center St	700	899	2142A3
Chanticleer Way	10	99	2143A3
Clear Ridge Dr	200	299	2042C1
Coghlan Rd	600	651	2143C1
College St	400	699	2142C2
College St	700	799	2142A4
Cowan Ln	1100	1129	2142A2
Daisy St	1300	1353	2142A2
Drayeur Ave	100	211	2142C4
Dry Creek Rd	1	99	2142A1
East St	100	319	2142C4
East St	320	399	2142C2
East St	400	499	2142C1
Fairway Ct	400	429	2142D2
Falcon Way	872	899	2142D2
Ferrero Dr	100	215	2142A1
Ferrero Dr	216	237	2142A3

Phase II - Final Product

What did work

- Time spent on manual clean up was significantly reduced (for some)
- Formatting improved readability

What didn't work

- Not sufficiently automated/ inefficient process
- Poor appearance / readability
- Number of pages for each agency (Still HUGE!)
- Some street segments excluded from extract
  - One-way street ranges
  - Backward ranges
- Range information duplicated on tiles

Phase II - Final Product

What we learned

- We don't need an army anymore
- Improved formatting needed for readability
- Automation of division of Agencies into separate tables
- More robust programming needed to address Sonoma County street range challenges

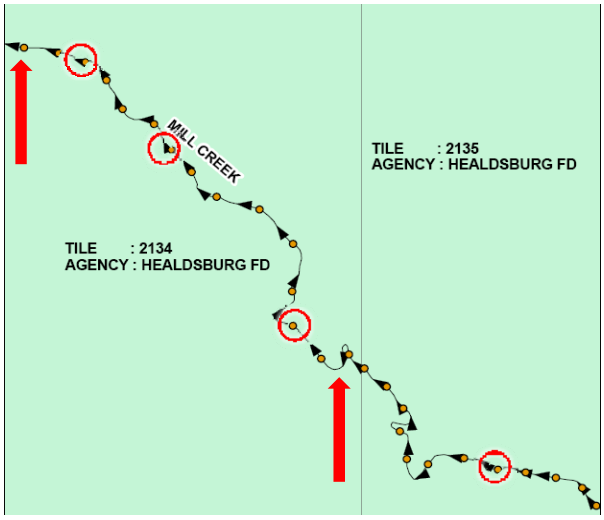
Focus for improvement

Step 1 – Original extract from ArcMap

Step 4 - Formatting

Custom Solutions – Phase III

Step 1 – Initial Extract with Street Range Information



Improvement over Phase II

Layers used - Streets
- Grid

Process in ArcGIS:

- Find centroids for street segments

- Intersect centroids layer with grid/Agency layer

Result:

- Street range will have correct Tile info

Custom Solution – Phase III

Step 1 – Initial Extract from Centroid/Grid Intersect

TILE	AGENCY	STREETNAME	FRADDL	FRADDR	TOADDL	TOADDR
4360	LAKEVILLE VFC	SILVA RANCH RD	7601	7600	7699	7698
4459	LAKEVILLE VFC	HWY 37	0	188	0	2
4361	SCHELL VISTA FPD	DICKSON RD	0	0	0	0
3450 A2	ROHNERT PARK DPS	SOUTH WEST BLVD	0	1124	0	978
3450 A2	ROHNERT PARK DPS	SOUTH WEST BLVD	0	1127	0	1199

Backward Range

One-way Streets

Run the table through VB program to create LOWs and HIGHs

TILE	AGENCY	STREETNAME	LOW	HIGH
4360	LAKEVILLE VFC	SILVA RANCH RD	7600	7699
4459	LAKEVILLE VFC	HWY 37	2	188
4361	SCHELL VISTA FPD	DICKSON RD	0	0
3450 A2	ROHNERT PARK DPS	SOUTH WEST BLVD	978	1124
3450 A2	ROHNERT PARK DPS	SOUTH WEST BLVD	1127	1199

Custom Solutions – Phase III

Description of Process

Step 2 – Condense continuous street ranges

- VB program designed to split into agencies
- No longer a manual process
- Results in 2 Output tables as in Phase II

Custom Solutions – Phase III

Step 3 – Gap Checks

Check street range gaps - Legitimate Gaps vs. Leaps in Range

- Streets that run in and out of grids
- Street that turn corners and change ranges in same grid tile
- Consolidation of ranges

Custom Solutions – Phase III

Step 4 – Format the Street Index

Run queries to:

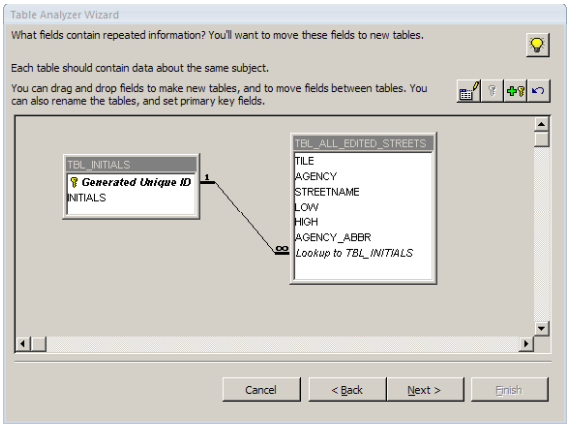
- Create new table by joining all checked and edited tables
- Update each row with abbreviated agency name
- Add new field which stores first letter of street name

TILE	AGENCY	STREETNAME	LOW	HIGH	INITIALS	AGENCY_ABBR
2142 C4	HEALDSBURG FD	HARMON ST	308	409	H	HEA
2445 B3	WINDSOR FPD	WOOD ROSE CT	308	357	W	WND
3047 B1	SANTA ROSA FD	ASUELO WAY	310	327	A	SRS
2042 A4	HEALDSBURG FD	BRIDLE PATH	310	361	B	HEA
2042 A4	GEYSERVILLE FPD	BRIDLE PATH	310	361	B	GEY
3149 D1	RINCON VALLEY FPD	BUTTERFLY LN	310	328	B	RIN
3660 B3	SONOMA VALLEY FIRE RESCUE	CASPIAN CT	310	329	C	SON

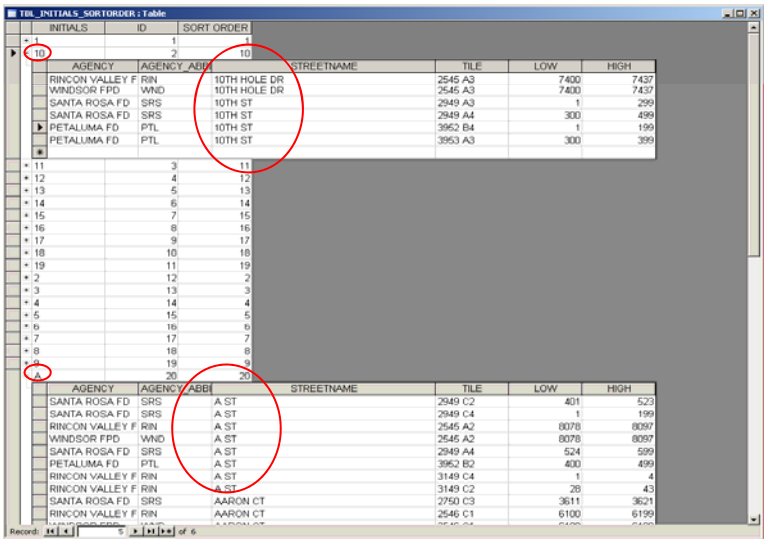
Custom Solutions – Phase III

Analyze New Table

- Remove redundant data
- Identify related data/ Create One to Many relationships



Custom Solutions – Phase III



Custom Solutions – Phase III

Description of Process

Step 4

- Establish Sequential Sort Order for Headings

  INITIALS field is data type “Text”

  Manual solution

Custom Solutions – Phase III

Incorrect Sort Order

temp : Table

INITIALS	ID
1	1
10	2
11	3
12	4
13	5
14	6
15	7
16	8
17	9
18	10
19	11
2	12
3	13
4	14
5	15
6	16
7	17
8	18
9	19
A	20
B	21
C	22

1

1st St

300 to 499 ..... 2949 C2

500 to 600 ..... 2949 D1

10

10th St

1 to 299 ..... 2949 A3

300 to 499 ..... 2949 A4

11

11th St

1 to 299 ..... 2949 A3

300 to 499 ..... 2949 A4

2

2nd St

300 to 499 ..... 2949 C2

500 to 600 ..... 2949 D1

A

A St

1 to 199 ..... 2949 A3

200 to 499 ..... 2949 A4

Custom Solutions – Phase III

Correct Sort Order

TBL_INITIALS_SORTORDER : Table

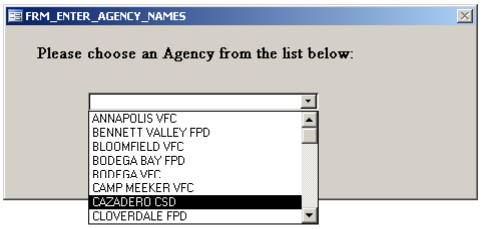
ID	INITIALS	SORT ORDER
1	1	1
12	2	2
13	3	3
14	4	4
15	5	5
16	6	6
17	7	7
18	8	8
19	9	9
2	10	10
3	11	11
4	12	12
5	13	13
6	14	14
7	15	15
8	16	16
9	17	17
10	18	18
11	19	19
20	A	20
21	B	21
22	C	22

1
1st St
300 to 499 ..... 2949 C2
500 to 699 ..... 2949 D1
2
2nd St
500 to 799 ..... 2949 D1
800 to 999 ..... 2949 D2
1000 to 1045 ..... 2949 B4
1046 to 1099 ..... 2950 A3
3
3rd St
1 to 99 ..... 2949 C3
100 to 498 ..... 2949 C2
500 to 799 ..... 2949 D1
800 to 999 ..... 2949 D2
1000 to 1099 ..... 2949 B4
4
4th St
1 to 199 ..... 2949 C1
200 to 299 ..... 2949 C2
500 to 535 ..... 2949 C2
536 to 799 ..... 2949 D1
800 to 1130 ..... 2949 B4
1101 to 1507 ..... 2950 A3
1500 to 1699 ..... 2950 A1
1700 to 2299 ..... 2950 A2
2300 to 2899 ..... 2950 B1
5
5th St
1 to 199 ..... 2949 C1
200 to 299 ..... 2949 C2
500 to 599 ..... 2949 C2
600 to 745 ..... 2949 D1
746 to 999 ..... 2949 B3
1000 to 1199 ..... 2949 B4
6
6th St
10
10th St
1 to 299 ..... 2949 A3
300 to 499 ..... 2949 A4
11
11th St
100 to 199 ..... 2948 B4
12
12 To Nb 101
0 to 0 ..... 2949 C4
12 To Sb 101
0 to 0 ..... 3049 A2
12th St
1200 to 1399 ..... 2949 B4
1400 to 1499 ..... 2950 A3
13
13th St
1100 to 1399 ..... 2949 B4
1400 to 1599 ..... 2950 A3
14
14th St
1000 to 1399 ..... 2949 B2
1400 to 1599 ..... 2950 A1
15
15th St
1100 to 1399 ..... 2949 B2
1400 to 1599 ..... 2950 A1
16
16th St
1500 to 1699 ..... 2950 A1
A
A St
1 to 199 ..... 2949 C4
401 to 523 ..... 2949 C2
524 to 599 ..... 2949 A4
Aaron Ct
3611 to 3621 ..... 2750 C3
Aaron Dr
3500 to 3615 ..... 2750 C3

Custom Solutions – Phase III

Description of Process

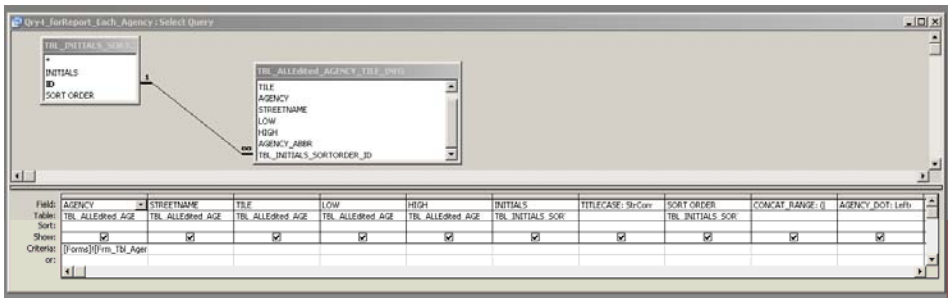
Step 4 - Creating Report Template



Custom Solutions – Phase III

Description of Process

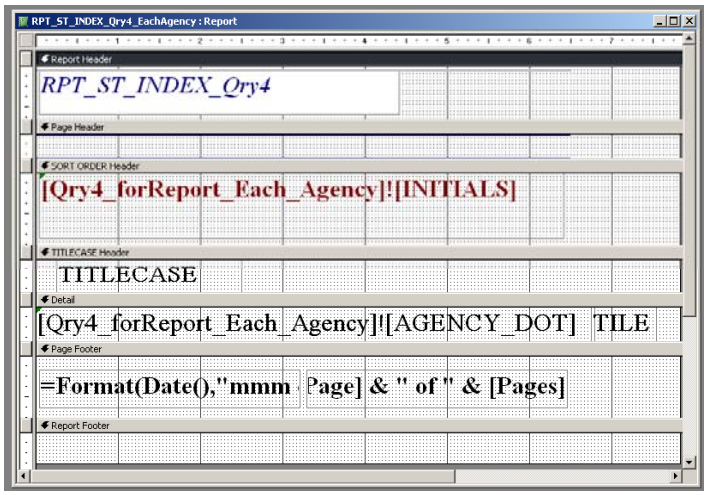
Step 4 - Creating Report Template



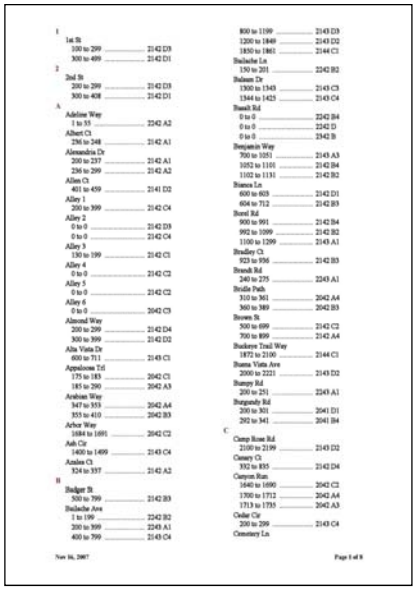
Custom Solutions – Phase III

Description of Process

Step 4 - Creating Report Template



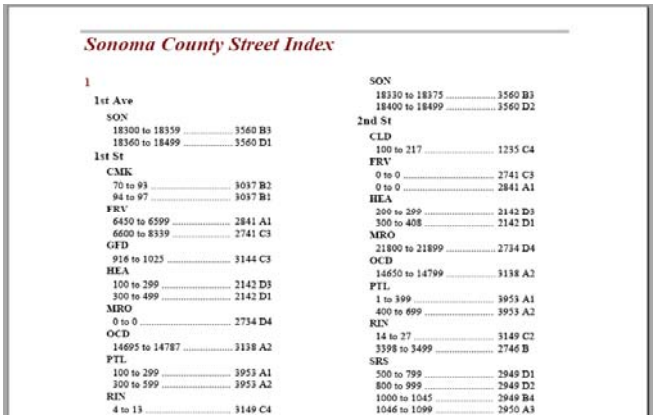
Custom Solutions - Phase III



All County Index

Purpose

- For use by outside and neighboring agencies
- Grouped by streets, agencies, ranges and tiles



Sonoma County Street Index

1

1st Ave

SON

18300 to 18359 ..... 3560 B3

18360 to 18499 ..... 3560 D1

1st St

CMK

70 to 93 ..... 3037 B2

94 to 97 ..... 3037 B1

FRV

6450 to 6599 ..... 2841 A1

6600 to 8339 ..... 2741 C3

GFD

916 to 1025 ..... 3144 C3

HEA

100 to 299 ..... 2142 D3

300 to 499 ..... 2142 D1

MRO

0 to 0 ..... 2734 D4

OCD

14695 to 14787 ..... 3138 A2

PTL

100 to 299 ..... 3953 A1

300 to 599 ..... 3953 A2

RIN

4 to 13 ..... 3149 C4

SON

18330 to 18375 ..... 3560 B3

18400 to 18499 ..... 3560 D2

2nd St

CLD

100 to 217 ..... 1235 C4

FRV

0 to 0 ..... 2741 C3

0 to 0 ..... 2841 A1

HEA

200 to 299 ..... 2142 D3

300 to 408 ..... 2142 D1

MRO

21800 to 21899 ..... 2734 D4

OCD

14650 to 14799 ..... 3138 A2

PTL

1 to 399 ..... 3953 A1

400 to 699 ..... 3953 A2

RIN

14 to 27 ..... 3149 C2

3398 to 3499 ..... 2746 B

SRS

500 to 799 ..... 2949 D1

800 to 999 ..... 2949 D2

1000 to 1045 ..... 2949 B4

1046 to 1099 ..... 2950 A3

Phase III - Final Product

What did work

- Time spent on manual clean up significantly reduced
- Time spent on creating indexes significantly reduced
- Formatting improved readability
- Number of pages greatly reduced – dual columns
- Programming successfully addresses street range challenges
- Formatting automated

What didn't work

- Not completely automated
  - Sort Order
  - McRoads
  - Misc non-streets – railroad tracks

Phase III - Final Product

What we learned

- We still don't need an army
- Programming needed to automate titlecase for street names
- Remove non-streets from Streets layer programmatically

Focus for improvement Phase IV

- Program in SQL
- Improvements to Programming
- Improved Spatial Analysis to better capture addresses

Conclusion

3 Phases for Custom Solution

4 Step Approach

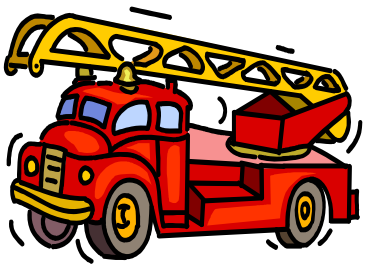
- Each iteration improved index
- Improvements remain to be made

Benefits of Street Index

- Used by outside agencies in event of large scale emergency
- Quick Reference
- Used by dispatchers / outside agencies

Questions?

Questions?



Contact Numbers

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  - **gkailash@sonoma-county.org**