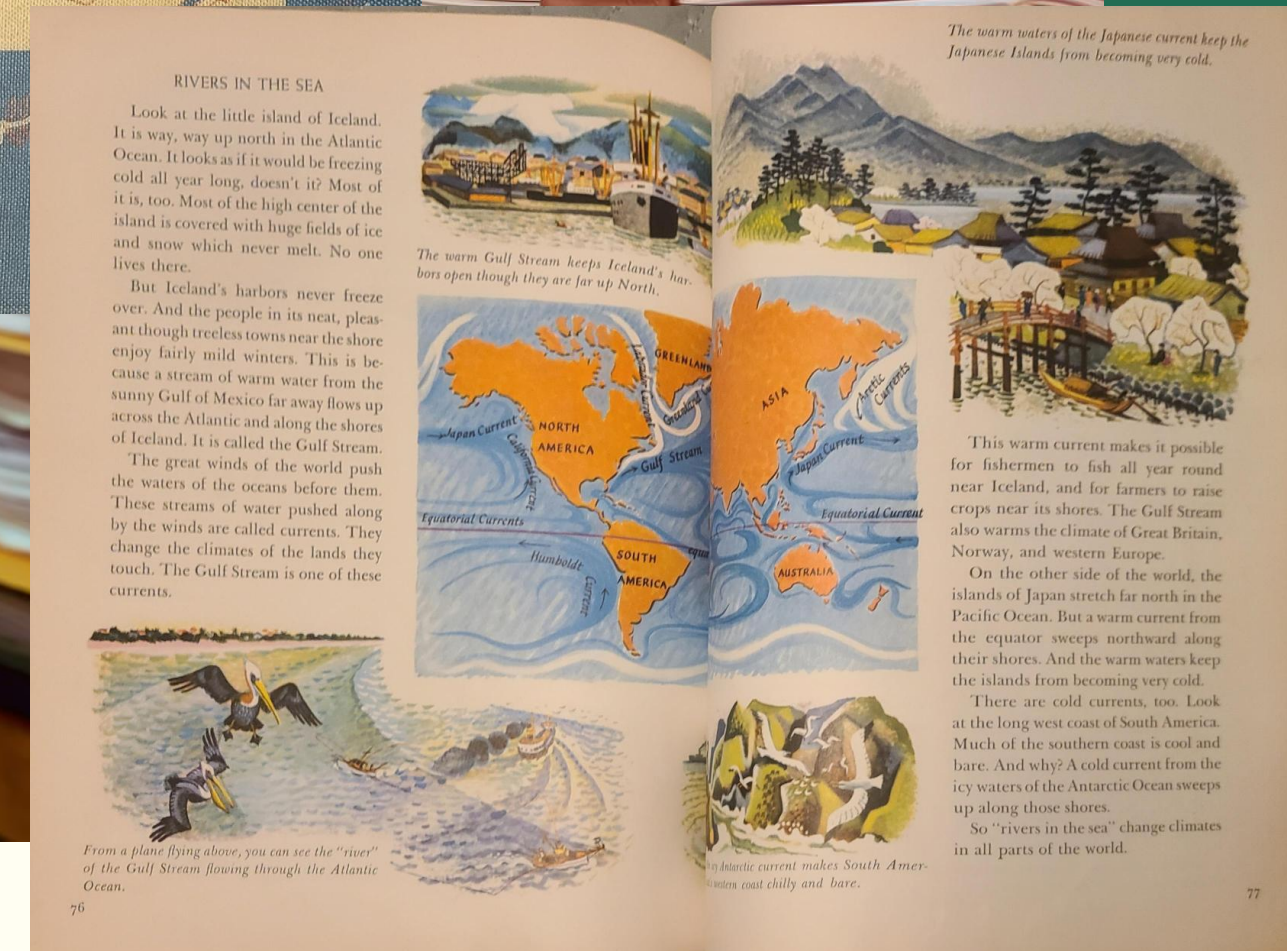
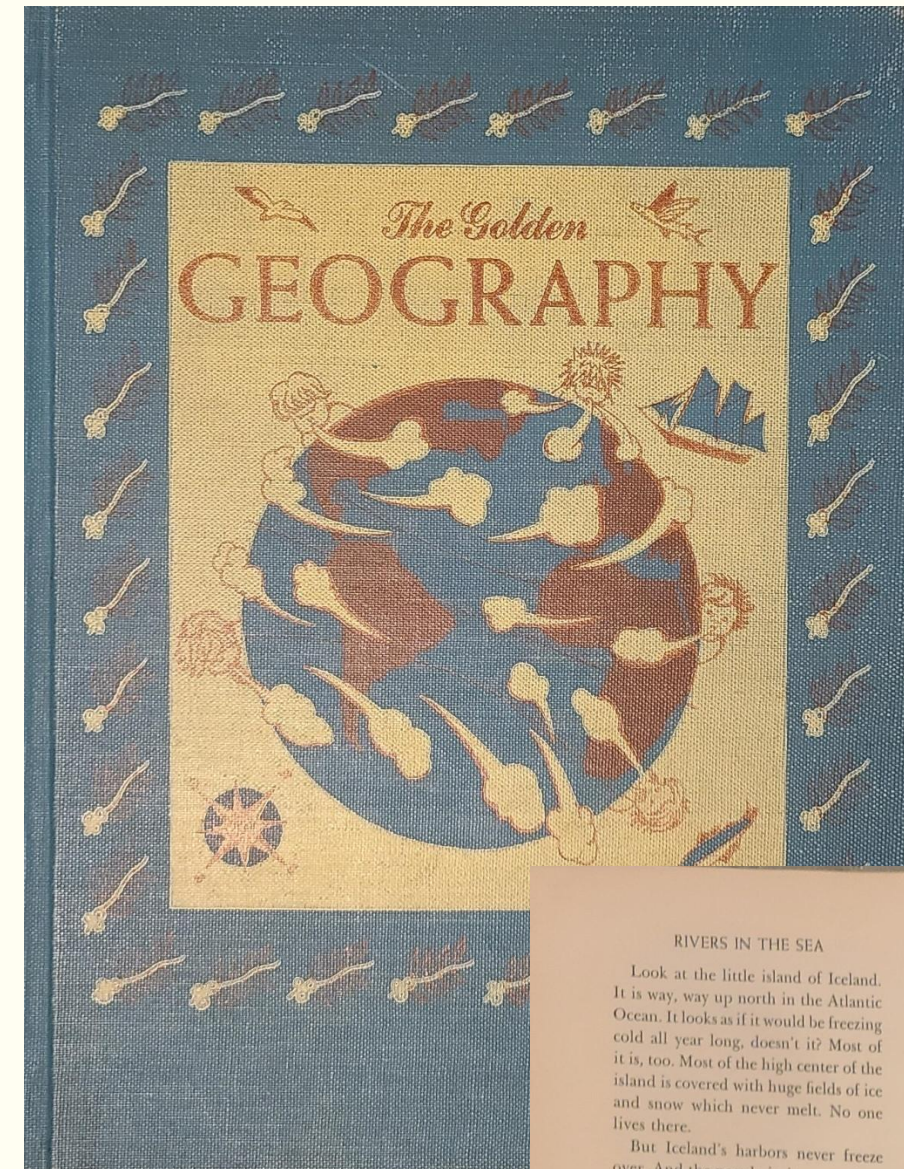


CITY OF CARROLLTON

Myriam Gomez

FROM PAPER STACKS TO DASHBOARDS:

An Adaptation of Survey123 and Survey123 Connect for
Environmental Operations



SURVEY123 & SURVEY123 CONNECT

ANALYZE

MANAGE

MOBILE

CHARTS,
GRAPHS,
MAPS

VISUALIZE

OPTIMIZE WORKFLOWS

SMART FORM BUILDER

RELIABLE DATA

Dynamic

CASE #1: WATER QUALITY MONITORING



Historical Records



SPER Turbidity Meter



DIST3 Conductivity Tester



Oakton PH Meter

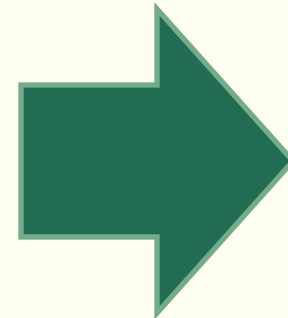


Pro20 DO Meter

CASE #1: WATER QUALITY MONITORING

ANDIE'S WORKFLOW

- 18 Excel Sheets for Each Testing Location
- Stack of Paper Records (historical and current)
- Analysis Done on Excel




ANDIE'S WISHLIST

- Data in an Exportable format
- Apply Queries and Analysis
- Eliminate Paper in/out of the Field
 - Images
 - Automation!!



CASE #1: WATER QUALITY MONITORING

- 1 I GOT LUCKY**
 - 2 SURVEYS BUILT BASED
ON FIELD PAPERWORK**
 - 3 ELIMINATED NEED OF A
“HELPER” TO WRANGLE
TOOLS AND PAPER**
- 

CASE #1: WATER QUALITY MONITORING

Surface Water Quality Monitoring Survey

Date and Time*
Insert date and time of data collection.

MM/DD/YYYY hh:mm

Sampler*
Insert full name.

Location ID*
-Please select-

Location:*

Find address or place

Tip: This question will try to use your location. Press to continue.

No geometry captured yet.

Ability to have more than 1 collector and get precise Sampling Locations

Receiving Water*
-Please select-

Weather

Stormy Raining Overcast Partly Cloudy Sunny

Field Observations/Measurements:

Base Observations

	Yes	No
Oil Sheen*	<input type="radio"/>	<input type="radio"/>
Trash*	<input type="radio"/>	<input type="radio"/>
Wildlife*	<input type="radio"/>	<input type="radio"/>

Odor*
-Please select-

Mult. types of answer selections

Surface Water Quality Monitoring Survey

Owner: myriam.gomez
Created: 7/18/22 2:21 PM
Modified: 4/3/24 4:37 PM

+ Collect >

▶ Sent 1 >

Sent box; to save and edit surveys once lab results are available

Water Quality Index:

Water Quality Range

Excellent Good Medium Bad Very Bad

WQI Rating:

23

Picture Attachment

Drop image here or select image

Submit

Picture attachments: for current testing conditions

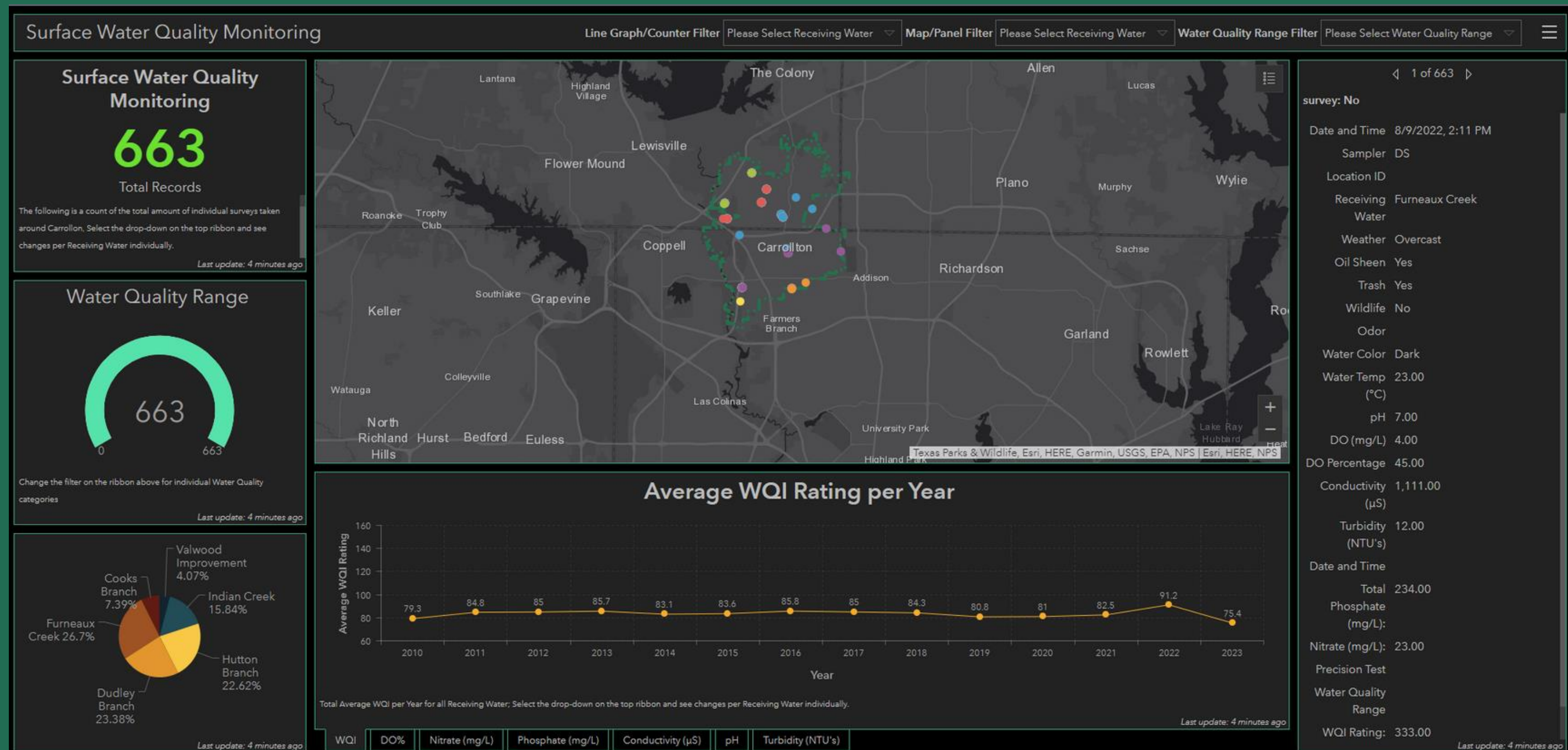
CASE #1: WATER QUALITY MONITORING

SO THE BIG QUESTION NOW...

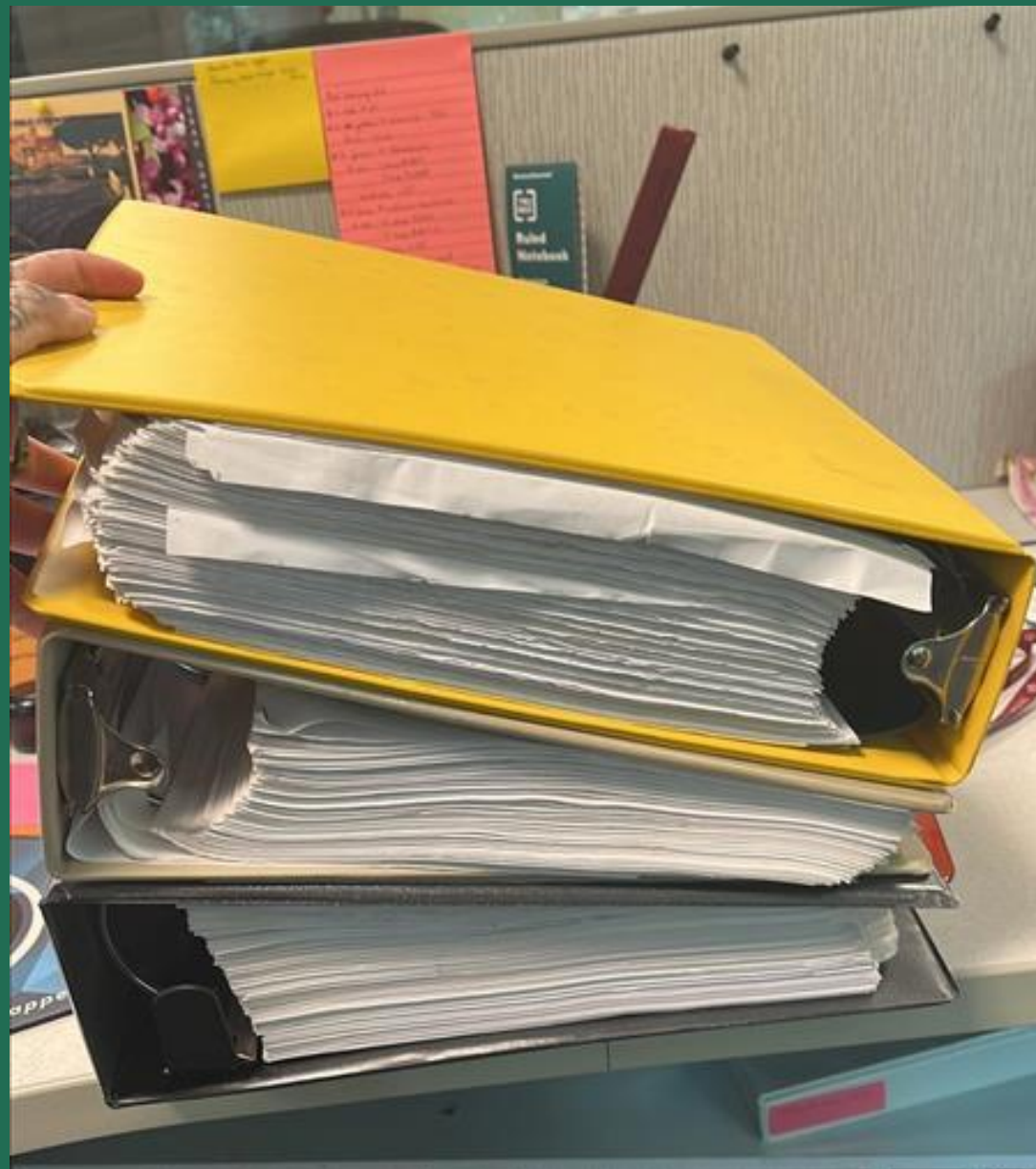
**WHAT TO DO ABOUT THE 18 EXCEL SPREADSHEETS
CONTAINING 10 YRS OF HISTORICAL DATA?**



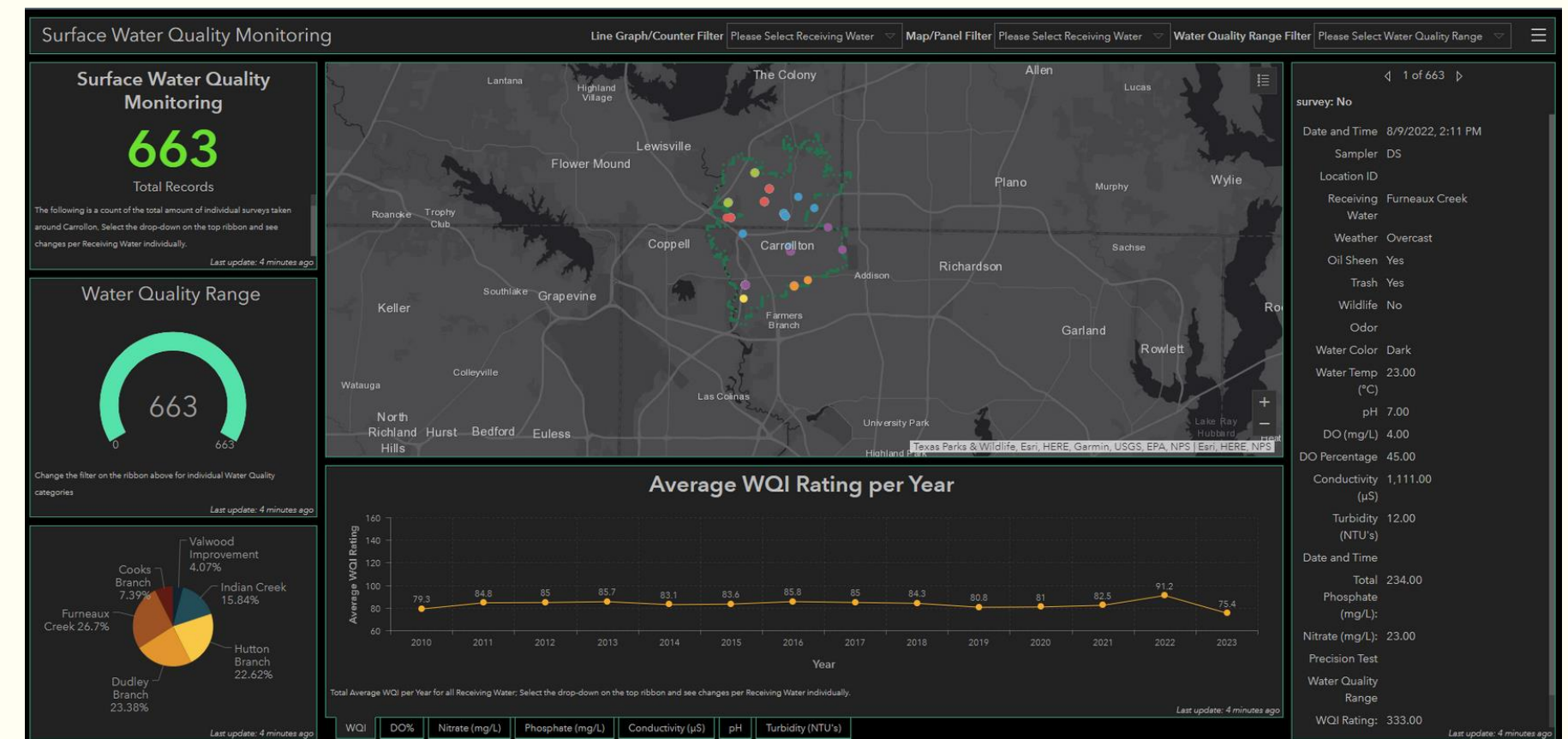
CASE #1: WATER QUALITY MONITORING



WE'VE GONE FROM THIS

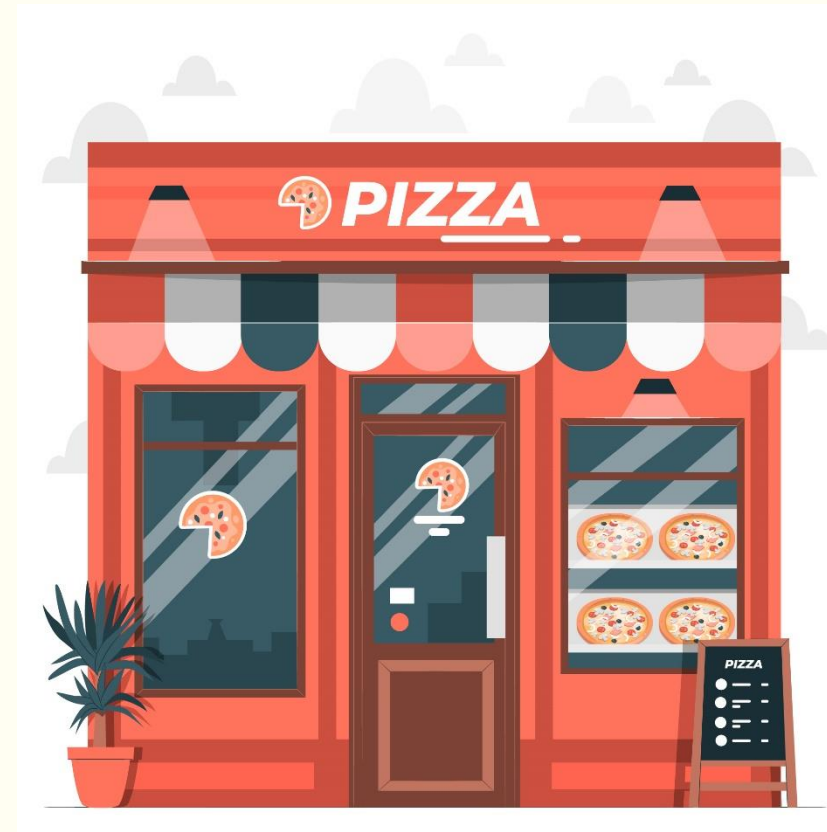


TO THIS



CASE #2:

RESTAURANT INSPECTIONS

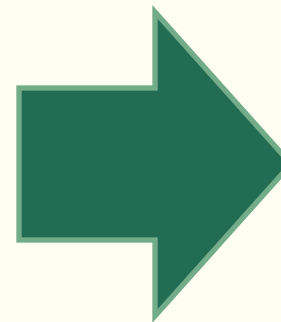


CASE #2:

RESTAURANT INSPECTIONS

SANITATIONS WORKFLOW

- Inspections tracked in Excel Sheet (due dates, over-due dates, scores, inspector assignments)
- Excel Sheet published periodically on City site to update public



SANITATIONS WISHLIST

- History of Inspections
- Show Inspections by next Due Date/Overdue Date
- Inspections/Restaurants created per month
 - Prep Level
- Citizen Access to Data
 - Automation!!

CASE #2:

RESTAURANT INSPECTIONS

1

CLEAN DATA OF 731 “FOOD PREP” ESTABLISHMENTS

2

SURVEY THAT CREATES HISTORICAL RECORD OF PREVIOUS INSPECTIONS

3

CREATE A PUBLIC AND INTERNAL RESTAURANT INSPECTIONS DASHBOARD

	C	D	E	F	G	H	I	J	K	L	M
	City	State	Score	Column	Distric	Score	Inspection Date	Days	Inspection Due	>30 Days Overdue	PrepLevel
1											
2	Carrallton	TX		Michael	B	96	9/19/2023	180	3/17/2024	4/16/2024	Heavy: 2 insp/yr
3	Carrallton	TX		Michael	B	96	9/25/2023	180	3/23/2024	4/22/2024	Light: 2 insp/yr
4	Carrallton	TX		Don	B	99	4/26/2023	180	10/23/2023	11/22/2023	Light: 2 insp/yr
5	Carrallton	TX		Don	F	98	10/2/2023	180	3/30/2024	4/29/2024	Light: 2 insp/yr
6	Carrallton	TX		Michael	B	93	5/9/2023	180	11/5/2023	12/5/2023	Light: 2 insp/yr
7	Carrallton	TX		Hee Youn	A	97	5/30/2023	180	11/26/2023	12/26/2023	Light: 2 insp/yr
8	Carrallton	TX		Hee Youn	B	96	6/20/2023	180	12/17/2023	1/16/2024	Light: 2 insp/yr
9	Carrallton	TX		Hee Youn	F	94	9/20/2023	180	3/18/2024	4/17/2024	Light: 2 insp/yr
10	Carrallton	TX		Don	F	98	6/20/2023	180	12/17/2023	1/16/2024	Light: 2 insp/yr
11	Carrallton	TX		Michael	A	95	6/20/2023	180	12/17/2023	1/16/2024	Light: 2 insp/yr
12	Carrallton	TX		Michael	B	93	6/5/2023	120	10/3/2023	11/2/2023	Heavy: 3-4 insp/yr
13	Carrallton	TX		Hee Youn	A	97	6/12/2023	120	10/10/2023	11/9/2023	Heavy: 3-4 insp/yr
14	Carrallton	TX		Michael	B	92	8/15/2023	120	12/13/2023	1/12/2024	Heavy: 3-4 insp/yr
15	Carrallton	TX		Michael	B	92	8/15/2023	120	12/13/2023	1/12/2024	Heavy: 3-4 insp/yr
16	Carrallton	TX		Michael	B	88	8/15/2023	120	12/13/2023	1/12/2024	Heavy: 3-4 insp/yr
17	Carrallton	TX		Michael	B	88	8/15/2023	120	12/13/2023	1/12/2024	Heavy: 3-4 insp/yr
18	Carrallton	TX		Michael	B	92	8/15/2023	120	12/13/2023	1/12/2024	Heavy: 3-4 insp/yr
19	Carrallton	TX		Michael	B	94	7/11/2023	365	7/10/2024	8/9/2024	None: 1 insp/yr
20	Carrallton	TX		Michael	B	90	6/7/2023	365	6/6/2024	7/6/2024	None: 1 insp/yr
21	Carrallton	TX		Michael	F	94	8/21/2023	120	12/19/2023	1/18/2024	Heavy: 3-4 insp/yr
22	Carrallton	TX		Don	B	96	3/7/2023	365	3/6/2024	4/5/2024	None: 1 insp/yr
23	Carrallton	TX		Don	F	99	6/21/2023	120	10/19/2023	11/18/2023	Heavy: 3-4 insp/yr
24	Carrallton	TX		Michael	B	99	5/12/2023	365	5/11/2024	6/10/2024	None: 1 insp/yr
25	Carrallton	TX		Hee Youn	B	99	8/21/2023	120	12/19/2023	1/18/2024	Heavy: 3-4 insp/yr
26	Carrallton	TX		Michael	B	94	7/25/2023	120	11/22/2023	12/22/2023	Heavy: 3-4 insp/yr
27	Carrallton	TX		Hee Youn	A	97	9/14/2023	120	1/12/2024	2/11/2024	Heavy: 3-4 insp/yr
28	Carrallton	TX		Michael	B	95	6/14/2023	120	10/12/2023	11/11/2023	Heavy: 3-4 insp/yr
29	Carrallton	TX		Michael	B	97	12/28/2022	365	12/28/2023	1/27/2024	None: 1 insp/yr
30	Carrallton	TX		Michael	B	90	8/14/2023	120	12/12/2023	1/11/2024	Heavy: 3-4 insp/yr
31	Carrallton	TX		Michael	B	89	9/12/2023	120	1/10/2024	2/9/2024	Heavy: 3-4 insp/yr
32	Carrallton	TX		Michael	B	92	8/14/2023	120	12/12/2023	1/11/2024	Heavy: 3-4 insp/yr
33	Carrallton	TX		Hee Youn	F	99	9/18/2023	120	1/16/2024	2/15/2024	Heavy: 3-4 insp/yr
34	Carrallton	TX		Hee Youn	F	96	9/18/2023	120	1/16/2024	2/15/2024	Heavy: 3-4 insp/yr
35	Carrallton	TX		Hee Youn	F	97	9/18/2023	120	1/16/2024	2/15/2024	Heavy: 3-4 insp/yr
36	Carrallton	TX		Hee Youn	F	100	4/25/2023	365	4/24/2024	5/24/2024	None: 1 insp/yr
37	Carrallton	TX		Michael	F	99	8/8/2023	365	8/7/2024	9/6/2024	None: 1 insp/yr
38	Carrallton	TX		Don	A	99	10/30/2023	120	2/27/2024	3/28/2024	Heavy: 3-4 insp/yr
39	Carrallton	TX		Michael	B	96	8/21/2023	120	12/19/2023	1/18/2024	Heavy: 3-4 insp/yr
40	Carrallton	TX		Michael	B	91	7/14/2023	120	11/11/2023	12/11/2023	Heavy: 3-4 insp/yr
41	Carrallton	TX		Hee Youn	A	98	6/22/2023	180	12/19/2023	1/18/2024	Light: 2 insp/yr

IS IT POSSIBLE TO ADD A HISTORY TO A SURVEY?

IN SHORT “YES.” BUT I DIDN’T KNOW HOW,
SO I RESEARCHED.



“ArcGIS Survey123: Modeling Inspection Workflows”

Ismael Ichivite - Esri Dev Summit

2022

CASE #2:

RESTAURANT INSPECTIONS

type	name	label	hint	appearance	required	default	calculation	constraint
text	inspection_establishment	Establishment						
text	inspection_address	Address						
geopoint	inspection_map	Map						
text	inspection_city	City		hidden				
text	inspection_state	State		hidden				
select_one prep	inspection_prelevel	Prep Level		minimal				
text	inspection_score	Score		hidden				
text	inspection_inspector	Inspector						
text	inspection_district	District						
decimal	inspection_score2	Score2						
date	inspection_inspection_date	Inspection Date				now()	calculationMode=always	
integer	inspection_days	Days						
date	inspection_inspection_due	Inspection Due					date(decimal-date-time(now()) + \${inspection_days})	
date	inspection_f_30_days_overdue	>30 Days Overdue					date(decimal-date-time(\${inspection_inspection_due}) + 30)	
begin repeat	log_history	Inspection Log		compact				
select_one prep	log_history_prelevel	Prep Level		minimal				
text	log_history_score	Score		hidden				
text	log_history_inspector	Inspector						
text	log_history_district	District						
decimal	log_history_score2	Score2						
date	log_history_inspection_date	Inspection Date						
integer	log_history_days	Days						
date	log_history_inspection_due	Inspection Due						
date	log_history_f_30_days_overdue	>30 Days Overdue						
end repeat								

pulldata("@property","mode")="edit"

calculationMode=always

date(decimal-date-time(now()) + \${inspection_days})

date(decimal-date-time(\${inspection_inspection_due}) + 30)

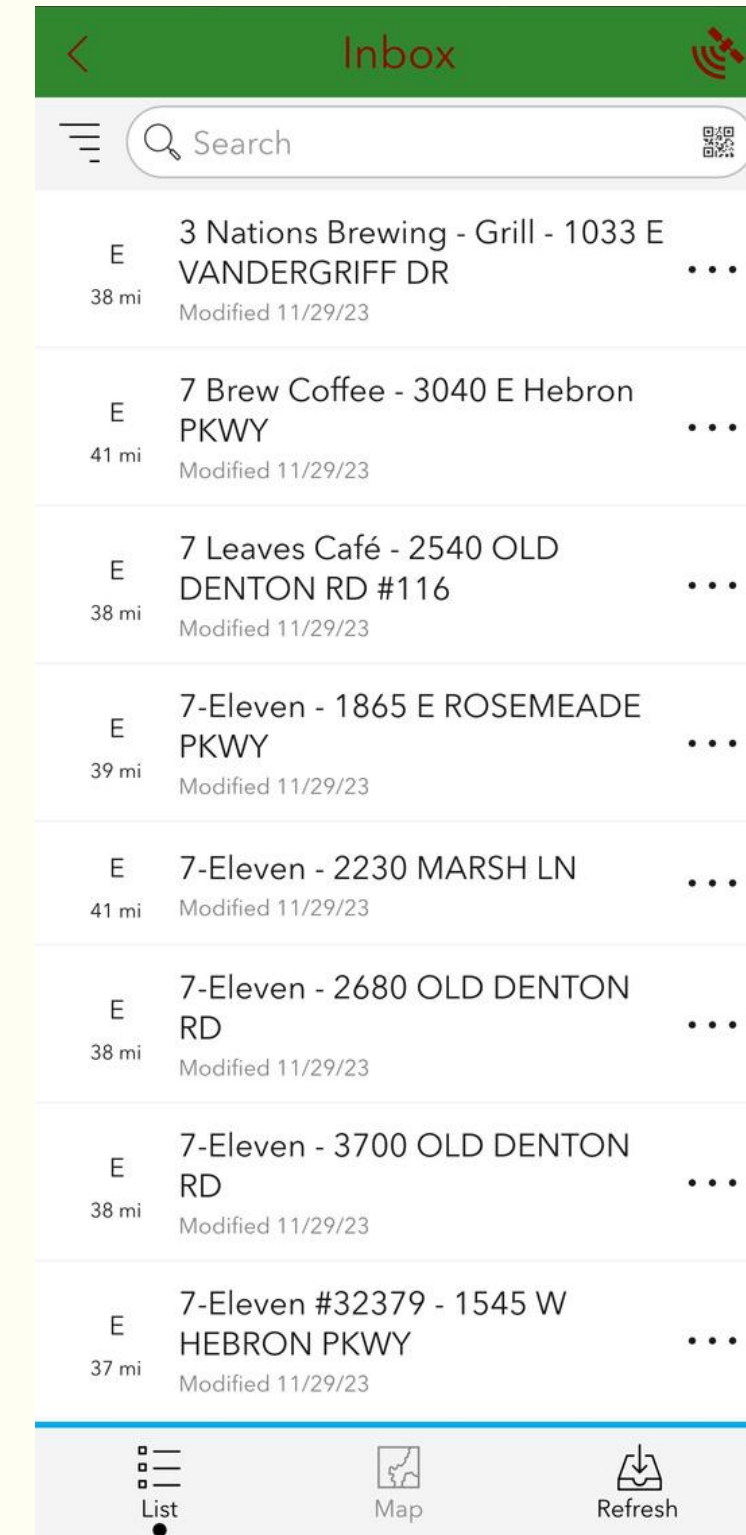
begin repeat - end repeat → this is what makes your historical record

CASE #2:

RESTAURANT INSPECTIONS

form_title	form_id	instance_name
Restaurant Inspections with History		concat(\${inspection_establishment}, " - ", \${inspection_address})

concat(\${inspection_establishment}, " - ", \${inspection_address})



CASE #2: RESTAURANT INSPECTIONS

Restaurant Inspections with History

Inspection Log

Prep Level
Heavy: 3-4 insp/yr

Inspector
Michael

District
A

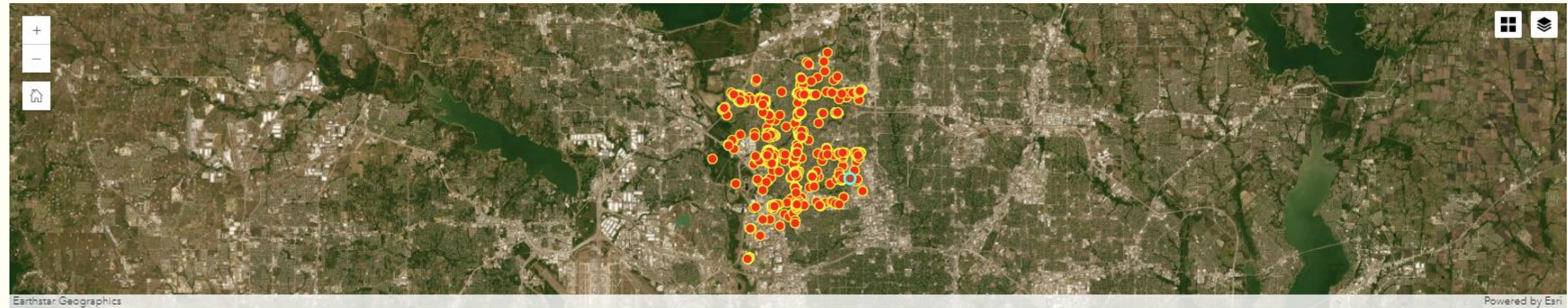
Score2
94

Inspection Date
Wednesday, September 20, 2023

Days
120

Inspection Due
Thursday, January 18, 2024

>30 Days Overdue
Saturday, February 17, 2024



Establishment	Address	City	State	Score	Inspector	District	Score2	Inspection Date
Fake Food Place	123 Fake Place Ln				Myriam	B	91	May 23, 2024



Score	Inspector	District	Score2	Inspection Date	Days	Inspection Due	>30 Days Overdue
	Myriam	B	91	May 23, 2024	120	August 10, 2024	September 9, 2024
	Myriam	B	80	April 30, 2024	120	August 10, 2024	September 9, 2024
	Myriam	B	99	April 12, 2024	120	August 10, 2024	September 9, 2024

begin repeat - end repeat →

this is what makes your historical record

CASE #2:

RESTAURANT INSPECTIONS

Restaurant Inspections with History

Establishment
Bacci's Pizza and Pasta

Address
3220 E HEBRON PKWY #104

Map
33°2'N 96°51'W

Prep Level
Heavy: 3-4 insp/yr

Inspector
Michael

District
A

Score2
94

Restaurant Inspections with History

Establishment
Bacci's Pizza and Pasta

Address
3220 E HEBRON PKWY #104

Map
33°2'N 96°51'W

Prep Level
Heavy: 3-4 insp/yr

Inspector
Michael

District
A

Score2
94

- Inbox
- Search
- E 3 Nations Brewing - Grill - 1033 E VANDERGRIF DR 38 mi Modified 11/29/23
 - E 7 Brew Coffee - 3040 E Hebron PKWY 41 mi Modified 11/29/23
 - E 7 Leaves Café - 2540 OLD DENTON RD #116 38 mi Modified 11/29/23
 - E 7-Eleven - 1865 E ROSEMEADE PKWY 39 mi Modified 11/29/23
 - E 7-Eleven - 2230 MARSH LN 41 mi Modified 11/29/23
 - E 7-Eleven - 2680 OLD DENTON RD 38 mi Modified 11/29/23
 - E 7-Eleven - 3700 OLD DENTON RD 38 mi Modified 11/29/23
 - E 7-Eleven #32379 - 1545 W HEBRON PKWY 37 mi Modified 11/29/23
- List Map Refresh

Restaurant Inspections with History

Inspector

District
8

Score2

Inspection Date
Friday, April 12, 2024

Days
30

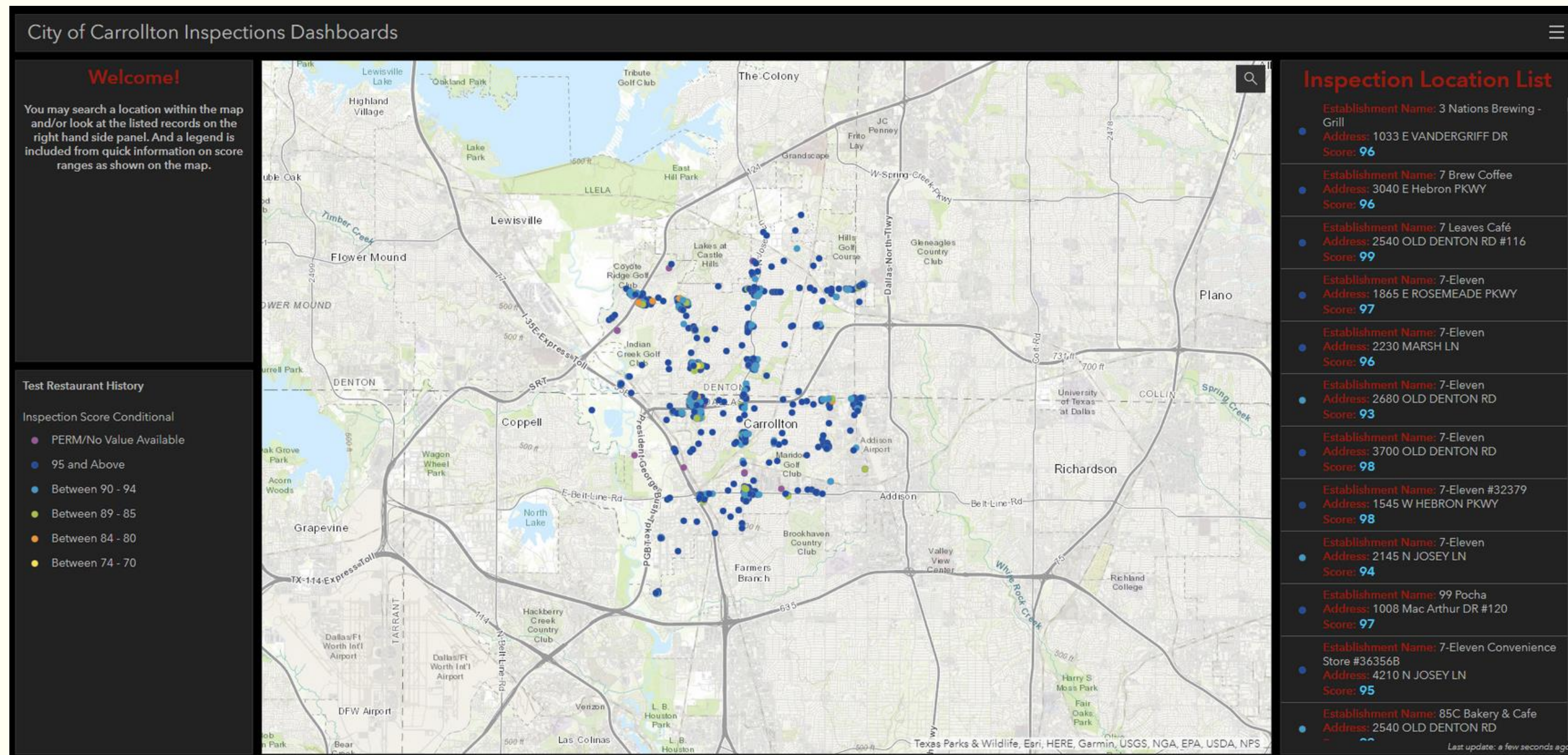
Inspection Due
Sunday, May 12, 2024

>30 Days Overdue
Tuesday, June 11, 2024

Inspection Log

CASE #2:

RESTAURANT INSPECTIONS



Inspection Score Conditional [Edit](#)

Expression

Test

```
1 // Write a script that returns a value that will be used to draw features.  
2 // For example, find the percentage of males:  
3 // Round(($feature.MalePop / $feature.TotalPop) * 100, 2)  
4  
5 var SCORE = $feature["inspection_score2"]  
6  
7 if (IsEmpty(SCORE)) {  
8   return "PERM/No Value Available"  
9 } else if (SCORE >= 95) {  
10  return "95 and Above"  
11 } else if (SCORE < 95 && SCORE >= 90) {  
12  return "Between 90 - 94"  
13 } else if (SCORE < 90 && SCORE >= 85) {  
14  return "Between 89 - 85"  
15 } else if (SCORE < 85 && SCORE >= 80) {  
16  return "Between 84 - 80"  
17 } else if (SCORE < 80 && SCORE >= 75) {  
18  return "Between 79 - 75"  
19 } else if (SCORE < 75 && SCORE >= 70) {  
20  return "Between 74 - 70"  
21 } else return "Below 70"  
22  
23
```

Custom Symbology
for Score Ranges

CASE #2:

RESTAURANT INSPECTIONS

Internal Inspections Dashboard

Inspector Selector:
Select from Dropdown

Date Record Indicator
[Calendar Icon] [Clock Icon]

Score Filter
0 [Up Arrow] [Down Arrow] 100 [Up Arrow] [Down Arrow]

Prep Level Filter:
Select Prep Level

Each section has filter(s) assigned to it, a description is included above each list and counter to make sure you know what filters go to what.

Inspector Selector

The top of the list is the most overdue from Today. You can filter the list by Inspector (top left, 1st of the list). Giving you out-of-date records for each inspector and count of relevant records above.

Total Records
731

If no Inspector is Selected this will show Total Record Count. Last update: a few seconds ago.

- Harmony Science Academy - 1024 W ROSEMEADE PKWY**
Inspection Date: 2/14/2023, 6:00 PM
Inspection Due: 8/13/2023, 7:00 PM
30 Days Overdue: 9/12/2023, 7:00 PM
- Harmony School of Innovation/Zenith Learning - 1024 W ROSEMEADE PKWY**
Inspection Date: 2/14/2023, 6:00 PM
Inspection Due: 8/13/2023, 7:00 PM
30 Days Overdue: 9/12/2023, 7:00 PM
- Jersey Mikes - 4009 Old Denton RD #118**
Inspection Date: 4/30/2023, 7:00 PM
Inspection Due: 8/28/2023, 7:00 PM
30 Days Overdue: 9/27/2023, 7:00 PM
- The Madison on the Marsh - 2245 MARSH LN**
Inspection Date: 5/1/2023, 7:00 PM
Inspection Due: 8/29/2023, 7:00 PM
30 Days Overdue: 9/28/2023, 7:00 PM
- Sum Fusion Korean Restaurant - 2625 Old Denton #538**
Inspection Date: 5/8/2023, 7:00 PM
Inspection Due: 9/5/2023, 7:00 PM
30 Days Overdue: 10/5/2023, 7:00 PM
- Manna Shabu - 1008 MacArthur DR #110**
Inspection Date: 5/9/2023, 7:00 PM
Inspection Due: 9/6/2023, 7:00 PM
30 Days Overdue: 10/6/2023, 7:00 PM
- The Cookline - 3030 N Josey LN**
Inspection Date: 5/9/2023, 7:00 PM

Score & Prep Filter

You can filter by Score Range or by Level of Preparation required by facility.

- 3 Nations Brewing - Grill - 1033 E VANDERGRIF DR**
Heavy: 2 insp/yr
Score: 96
- 7 Brew Coffee - 3040 E Hebron PKWY**
Light: 2 insp/yr
Score: 96
- 7 Leaves Café - 2540 OLD DENTON RD #116**
Light: 2 insp/yr
Score: 99
- 7-Eleven - 1865 E ROSEMEADE PKWY**
Light: 2 insp/yr
Score: 97
- 7-Eleven - 2230 MARSH LN**
Light: 2 insp/yr
Score: 96
- 7-Eleven - 2680 OLD DENTON RD**
Light: 2 insp/yr
Score: 93
- 7-Eleven - 3700 OLD DENTON RD**
Light: 2 insp/yr
Score: 98
- 7-Eleven #32379 - 1545 W HEBRON PKWY**
Light: 2 insp/yr
Score: 98
- 7-Eleven - 2145 N JOSEY LN**
Light: 2 insp/yr
Score: 94
- 99 Pocha - 1008 Mac Arthur DR #120**

Percent Overdue by 30 Days

82.8%

Last update: a few seconds ago.

Scores Above 87%

685

Last update: a few seconds ago.

Created Records Count

731

In the Date Record Indicator select Beginning and End Date range to see records CREATED in that time period. Last update: a few seconds ago.

Internal Inspections Dashboard

Inspector Selector:
Select from Dropdown

Don

Hee Young

Michael

Score Filter

Select from Dropdown

Date Record Indicator
8/1/2023 [Calendar Icon] [Clock Icon]

8/31/2023 [Calendar Icon] [Clock Icon]

Score Filter
0 [Up Arrow] [Down Arrow] 100 [Up Arrow] [Down Arrow]

Prep Level Filter:

Scores Above 87%

117

Last update: a few seconds ago.



CASE #2: RESTAURANT INSPECTIONS

WHAT'S NEXT?

- **Implementations (in field and with another City App)**
 - **Updating**
 - **Expanding to Grease Traps**



QUESTIONS?



MYRIAM GOMEZ

GIS Analyst, City of Carrollton

myriam.gomez@cityofcarrollton.com

THANK YOU