

Time to Disposition Report – 2022 Obnoxious Convictions (Felony & Misdemeanor) 61st District (Adams & Fillmore Counties)

1. Executive Summary

- The 61st District shows **significantly higher time to dispose of** qualifying cases compared to other counties.
- **No qualifying cases** were found for Quincy in 2022.
- **Adams** and especially **Fillmore** include multiple **high-delay outlier cases**.
- There is **no consistent trend of improvement** across the months of 2022.
- Peer counties (e.g. Polk, Pierce, Buchanan) performed **more consistently and with shorter delays**.

2. Methodology

- **Data Review & Preparation:**
 1. Loaded 2022 charge and motion data, along with translation tables for decoding codes (e.g., disposition type, charge level, county).
 2. Created a Unique_Key by combining CHG_COUNTY_NUM and CHG_CASE_NUMBER to group rows at the case level.
- **Filtering Criteria:**
 1. Included only charges with:
 - i. Guilty dispositions (CHG_DISP_TYPE_CODE = G)
 - ii. Felony or misdemeanor levels
 - iii. “Obnoxious” in the charge description
 - iv. Disposition date in calendar year 2022
 - v. Located in Adams, Fillmore, or Quincy counties (61st District – no qualifying cases for Quincy)
- **Data Cleaning:**
 1. Excluded entries with invalid or future dates (February 29, 2023, or years like 2031)
 2. Removed rows with missing disposition dates (as delay could not be calculated)
- **Time Calculation & Aggregation:**
 1. Computed the number of days from the earliest charge to latest disposition per case.
 2. Summarized each case with maximum disposition days and month/year of charge for temporal trend analysis.
- **Motion Data Integration:**
 1. Merged motion data with charge-level records using the Unique_Key.
 2. Counted total motions per case and summarized motion types into a consolidated string (e.g., “6 – CONT & MOT”) for quick reference.
- **Comparative Context:**
 1. Repeated the same analysis for other counties.
 2. Charted monthly averages and overall disposition delays to benchmark the 61st District

3. Problems Encountered:

- Identified and excluded records with invalid dates (e.g., February 29, 2023) or implausibly future dates (e.g., 2031+), totaling approximately 4% of the dataset.
- Excluded cases with missing disposition dates, as duration could not be calculated.
- Dealt with multiple charges per case by grouping on Unique_Key and calculating metrics at the case level (e.g., max disposition days).

4. Data Quality Notes

Approximately 4% of the dataset was excluded due to the following data quality issues:

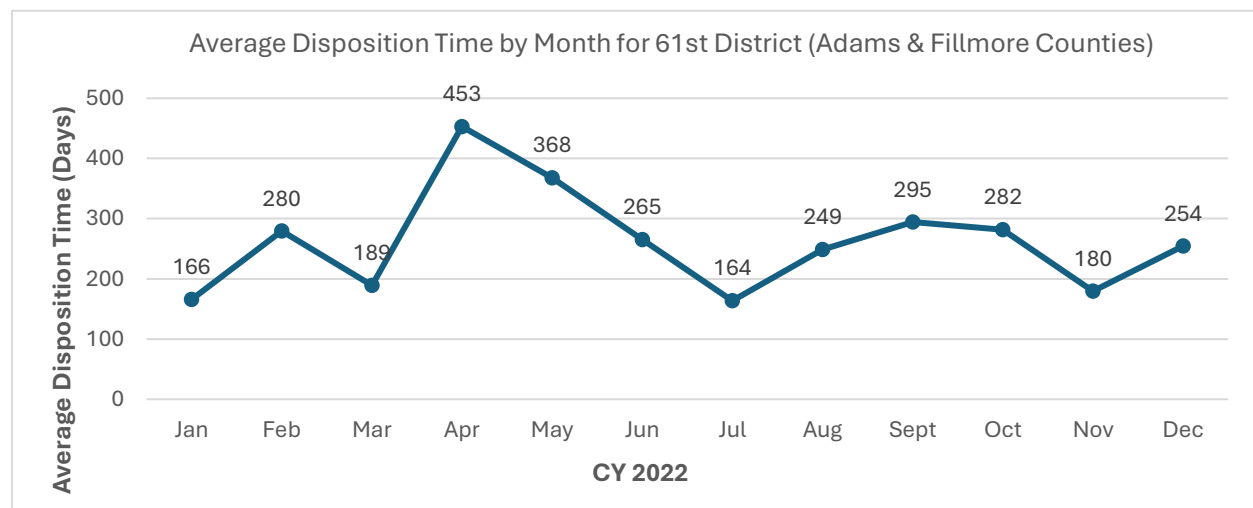
1. Invalid calendar dates, such as February 29, 2023, a non-leap year.
2. Unrealistic future disposition dates, including entries as far out as 2031 and beyond.
3. Missing disposition dates, which made it impossible to calculate time to disposition.

5. Key Findings and Insights:

Disposition Time Trends – 61st District (Adams & Fillmore Counties Only)

To better understand the case resolution patterns within the 61st District, I generated a month-by-month summary of average disposition times, case volumes, and motion activity for calendar year 2022. The visualization and accompanying table below highlight fluctuations in processing speed and help identify periods of delay or irregularity. These temporal insights form the basis for the key findings outlined in the next section.

CY 2022	Average Disposition Time (Days)	Number of Cases	Number of Motions
Jan	166	13	75
Feb	280	12	57
Mar	189	11	71
Apr	453	11	82
May	368	18	96
Jun	265	15	83
Jul	164	12	60
Aug	249	16	77
Sep	295	10	39
Oct	282	14	82
Nov	180	10	28
Dec	254	12	63



Adams County

- **Highest average disposition time in April (~453 days)**
- High values are consistent **throughout other months**, suggesting sustained delays.

Fillmore County

- **Extreme peak in April (981 days average)**
- Distribution is **highly skewed due to outliers**, indicating a few cases are driving up the monthly average significantly.

Quincy County

- **No qualifying cases** in 2022 related to felony/misdemeanor obnoxiousness convictions.

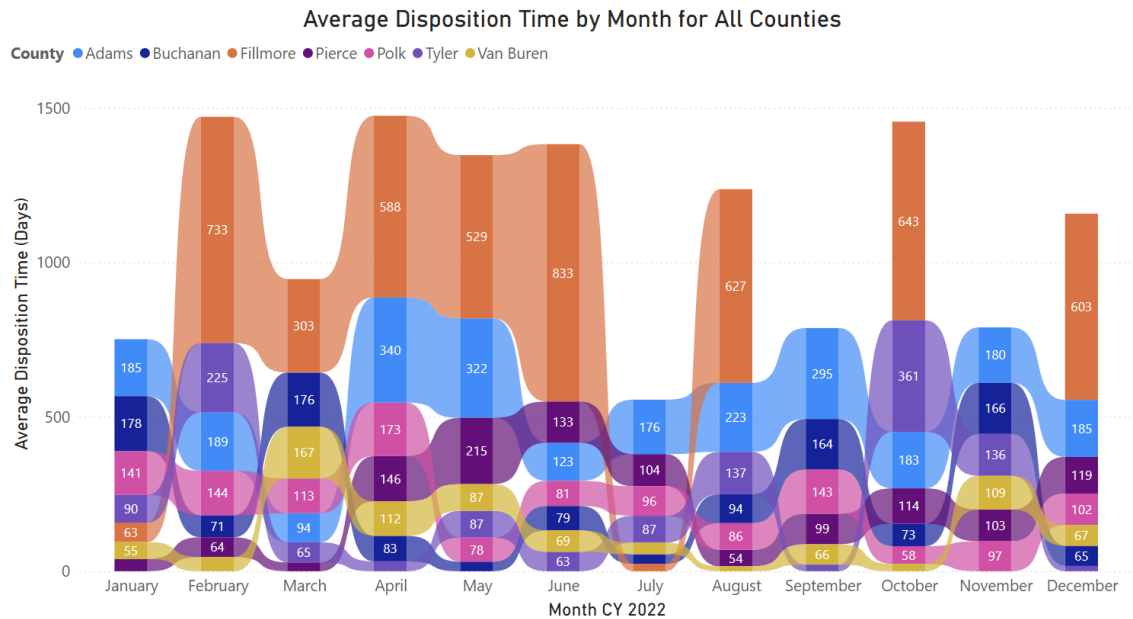
Motions and Disposition Delays – Key Observations

- **Higher motion activity is strongly associated with longer disposition times.**
Example: April and May had the highest number of motions (111, 98) and the longest average delays (453 and 368 days, respectively).
- **Cases with more motions took significantly longer to resolve.**
– Some months saw an average of **8–11 motions per case**, aligning with peaks in delay.
- **Disposition delays do not correlate directly with case volume.**
– Months with fewer cases but more motions (e.g., February) had longer delays than busier months with fewer motions (e.g., August).
- **This pattern suggests that motions, especially continuances, are a primary contributor to extended case timelines.**
- **April and May** stand out across both counties as **peak months for delay**.
- These spikes align with **increased motion activity**, reinforcing a possible connection between motions and extended case timelines.

Comparative Average Disposition Times Trends by County – CY 2022

To contextualize the findings from the 61st District, I extended the analysis to include several other counties (Buchanan, Pierce, Polk, Tyler, and Van Buren). This allowed for a comparative view of average disposition times across jurisdictions throughout calendar year 2022. The goal was to assess whether the observed delays in Adams and Fillmore are systemic or specific to the district. The visual and tabular summaries below offer a snapshot of monthly trends and overall averages.

	Average Disposition Time (Days)												
County	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
Adams	185	189	94	340	322	123	176	223	295	183	180	185	210
Buchanan	178	71	176	83	31	79	31	94	164	73	166	65	92
Fillmore	63	733	303	588	529	833	24	627	0	643	0	603	516
Pierce	40	64	29	146	215	133	104	54	99	114	103	119	100
Polk	141	144	113	173	78	81	96	86	143	58	97	102	109
Tyler	90	225	65	32	87	63	87	137	22	361	136	17	122
Van Buren	55	46	167	112	87	69	37	16	66	23	109	67	77



1. Fillmore and Adams had the longest average disposition times across all counties.
2. Other counties like Pierce, Polk, Tyler ranged between 100 to 122 days.
3. Buchanan and Van Buren were the fastest, averaging 92 and 77 days.

The comparative analysis confirms that **delays in the 61st District are not systemic**. Rather, they appear to be **localized to Adams and Fillmore Counties**.

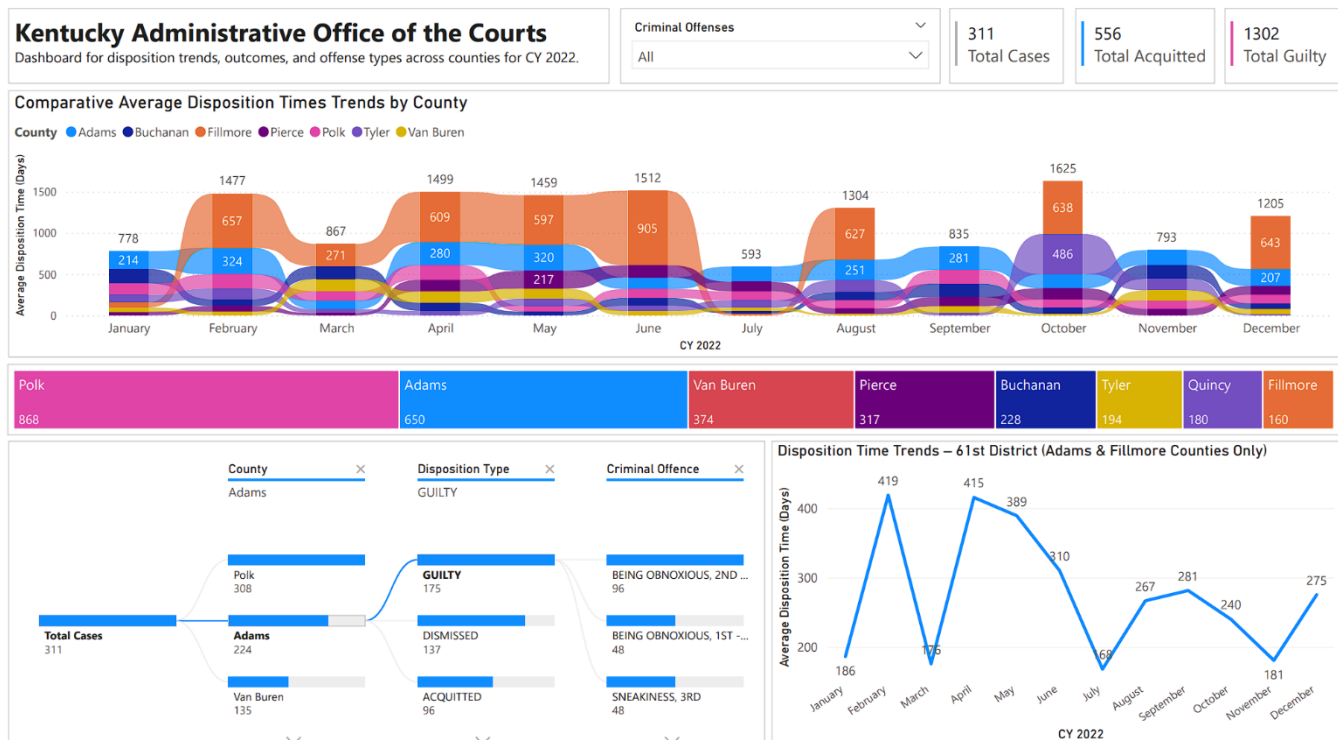
6. Software Limitations and Enhancements

The analysis was primarily conducted using Microsoft Excel, which was effective for structured filtering, basic data cleaning, and the development of static charts and summary tables. While Excel provided a solid foundation for this project, there were certain limitations in terms of scalability, interactivity, and data exploration capabilities.

If more advanced tools were available, I would have:

- **Used Power BI or Tableau** to develop dynamic dashboards with filters for county, year, charge level, and motion types, allowing staff to explore trends interactively.
- **Enabled drill-down functionality** to investigate outlier cases directly through visual elements (e.g., clicking on a spike in disposition time to view specific case IDs).
- **Leveraged Python (pandas, seaborn, plotly) or R (ggplot2)** for improved efficiency in data manipulation, outlier detection, and custom visualizations with enhanced formatting.

To illustrate the potential of a more advanced approach, I've included a **screenshot of a sample Power BI dashboard** that reflects how this data could be visualized with interactivity and greater visual clarity. This example highlights how insights could be made more accessible and user-friendly with the right tools.



This Power BI dashboard enables dynamic exploration of criminal case disposition data for CY 2022. Users can interact with filters for criminal offense type, county, and disposition outcome to instantly update all visuals. Clicking on any element, such as a county on the heatmap chart or a segment in the ribbon chart, automatically filters related to metrics and trends. This interactivity helps identify patterns by county, monitor monthly disposition delays, and understand the distribution of guilty verdicts across offense types and jurisdictions.

7. Use of Artificial Intelligence

- Used **OpenAI's ChatGPT** to support:
 - Organize findings into clear, audience-specific summaries.
 - Assisting with refining language for a more professional tone.
- All data processing and visualizations were conducted manually in Excel, while AI was used strictly for documentation support.

8. Conclusion

The 61st District, particularly Adams and Fillmore counties, showed significantly longer average disposition times in 2022, with peaks in April and May. These delays closely align with months of high motion activity, especially continuances, pointing to a likely connection between motions and extended case timelines.

In comparison, other counties maintained lower and more stable disposition times, suggesting the issue is not statewide but specific to the district. An interactive Power BI dashboard was created to support ongoing monitoring and provide stakeholders with a clear, visual way to explore patterns across counties and time.