Understanding Illinois Legal Aid Online's Users and their Needs
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In 2020, ILAO partnered with DSSG Solve to better understand ILAO's users and their needs. The goal of this project was to go beyond anecdotal feedback, user interviews, and Google Analytics to patch together a profile of who is using the website and how it helps.

The Solve team focused on identifying patterns of usage that ILAO could use to guide adding links between pages to preemptively provide resources to users who might need them.

This intervention is specifically useful for users who are looking for resources for personal use, rather than professionals. So, the team began by using device type (desktop vs. mobile) and time of day of site access (within business hours vs. not) to separate the personal from professional users. Users are identified either through an account, if they have one and are logged in, or through browser cookies.

The data used in this analysis was collected by Acquia Lift and includes records of and metadata for each user's visits to the site ("touches"), as well as all the actions they took within a visit ("events") from March 1, 2019 through May 1, 2020. Originally the data included 25.4 million unique touches covering 20.3 million persons, which was unwieldy to analyze given the total number of columns. However, 19.6 million of the 20.3 million persons had only one touch in the dataset, so we filtered the data to only include users that had more than one touch as we were mostly interested in the experience of users who returned to the site. This allowed us to cut down significantly on the total size of the data, allowing some tables to be read completely into memory. The larger tables still needed to be split and analyzed in sections in order to avoid hitting memory limits.

Search terms used to find ILAO's resources

Professional users
(primarily on desktops + use
the site during business
hours)

Non-professional users
(primarily on mobile + use
the site outside business
hours -- nighttime)

An individual is counted as a desktop-primary user if they accessed the site over 50% of the time using a desktop, and mobile-primary otherwise. Similarly, business-hours users accessed the site over 50% of the time during business hours. The desktop + business users both

accessed the site over 50% of the time on a desktop and over 50% of the time during business hours. We identified 98,335 of the professional (desktop + business) users, and 307,435 of the non-professional (mobile + nighttime) users.

From here, the team focused on identifying pairs of pages that were frequently visited by the same user. As pages within the same category typically already have links between them on the website, they selected specific categories of interest to ILAO and identified pages *outside* of that category that were frequently viewed by users who also looked at pages *within* the category. This system of categorization, as recommended by ILAO, is somewhere between legal services problem codes and ILAO's own legal issues taxonomy.

Mobile Nighttime Users: Top 15 Pages from Other Content Sections Viewed by People Who Looked at **Public Benefits** Pages

Content Title	Other Content Section	Number of Users
Applying for unemployment benefits	Unemployment Compensation	341
Am I eligible for Medicaid?	Health, public benefits	262
Getting unemployment benefits	Unemployment Compensation	231
Can I receive unemployment benefits if I work a temp job?	Unemployment Compensation	134
Illinois State ID basics	Traffic	131
Application for a person with a disability ID card - blank	Traffic	128
DCFS cases and child protection services	Safety/Abuse	128
Application for unemployment benefits - online	Unemployment Compensation	121
Understanding DCFS investigations	Safety/Abuse	118
The low income home energy assistance program (LIHEAP)	Utilities	115
If I quit my job, can I get unemployment benefits?	Unemployment Compensation	108
Presentar una solicitud para beneficios de desempleo	Unemployment Compensation	105
Getting a divorce	Family (divorce)	96
3 types of orders of protection	Safety/Abuse	92
Applying for Medicaid	Health, public benefits	89

Note: excludes "procedural" content

As an example, 131 non-professional (mobile-primary, non-business hours) users viewed both a page within the Public Benefits category and the page "Illinois State ID basics." See the end of this document for the complete set of tables for each category of interest and user type.

From here, we hope that ILAO will be able to use these results to identify and target places to add links between resources that are frequently accessed together, but otherwise may not be connected. As a result, users may be more aware of useful resources and commonly associated content. ILAO will perform pilot A/B tests on page pairings to either add a "Users who looked at this page also looked at this other page" or update the existing recommended/related block to include these newly identified page pairings. Here are some examples of content pairings they are interested in testing:
- Public benefits -> state ID
- Debt -> Car issues (repossession / impounded)
- Rental housing -> Foreclosure

- Safety/abuse -> Family (divorce + custody issues)
- Crime pages -> DCFS content
- Eviction -> Utility shut off, DCFS cases

ILAO has significant experience conducting these kinds of A/B tests using Google Optimize, and will evaluate success using a combination of metrics including: increase in session duration, number of pages accessed, decrease in bounce rates for users who viewed the updated pages versus the original pages.

This analysis focused on the content area of each page, the number of users who visited each page, and the time and device type of each access. Further analysis of this data could include focusing on specific geographical areas to get more granular results about different types of users based on their locations, including cross-referencing those locations with the positions with the locations of publicly available resources such as libraries. This would get at more specifics of the different ways different types of users utilize the site. Another method of identifying more granular groups of users would be using the demographics that are provided for users with ILAO accounts. Perhaps some patterns of usage could be identified focusing specifically only on these users. Continuing in the current vein of results, the tables of page/content area pairings could be further extended: were there other overlapping pages that users also viewed?

Another particularly interesting follow-up would be to try to quantify more precisely certain trends in how users return to the website after visiting certain pages. The type of question we would like to answer can be formulated as: if a user visits page x, how likely is that user to return and visit page y, and how much time is likely to pass between the two visits? A well-structured answer would allow ILAO to make better recommendations of the other pages that their users should visit.

It would also be interesting to investigate whether shifts in traffic are visible around the start of the COVID-19 pandemic, as the data period goes until May 1, 2020. It is likely that some legal issues became more pressing in those months as compared to the period before, and that analysis could be valuable to inform interventions while the pandemic is still ongoing as well as after.

<u>Overview of the cleaned data</u>

The following cleaned data files were generated over the course of the analysis, and are accessible from the same location as the original data files -- please refer to the original data dictionary for details about the contents of the original files:

- *touch_fixed*: Same as the original touch file, without tab and new line characters in data fields.
- *event_fixed*: Same as the original event file, without tab and new line characters in data fields. Transformation in clean_events.py.
- *touch_multiple_deduped:* Created from touch_fixed by selecting persons with more than one touch and deduplicating touches by the same person within one second of each other as found here.
- *person_ids_appear_more_than_once*: IDs of the persons that have more than one touch, as created here.
- *event_professionals*: events corresponding to touches in touch_multiple_deduped and persons whose majority (>50%) of touches are between 13:00 and 22:00 UTC and on a desktop, as created here. Holidays not taken into account.
- *event_non_professionals*: events corresponding to touches in touch_multiple_deduped and persons not part of event_professionals, as created here.
- *event_desktop_ppl*: events corresponding to touches in touch_multiple_deduped and persons whose majority (>50%) of touches are on a desktop, as created here.
- *event_mobile_ppl*: events corresponding to touches in touch_multiple_deduped and persons not part of event_desktop_ppl, as created here.
- *event_desktop_ppl2, event_mobile_ppl2, event_professionals2*: events whose persons are present in touch_multiple_deduced - i.e., similar to the versions without the number 2, but selected on person IDs rather than touch IDs. Made to check whether touches with 0 events were caused by our filtering, which turned out not to be the case, so these can be ignored. Created here.
- *people_business_desktop*: persons whose majority (>50%) of touches are between 13:00 and 22:00 UTC and not on a weekend or holiday in Illinois and on a desktop, as created here.
- *{event,touch}_{mobile,desktop}_{business,night}*: Created here from touch_multiple_deduped, event_desktop_ppl, and event_mobile_ppl. Desktop is from persons whose majority (>50%) of touches are on a desktop, and mobile is the complement of that set of persons. Business is from persons whose majority (>50%) of touches are between 13:00 and 22:00 UTC and not on a weekend or holiday in Illinois, and night is the complement of that.
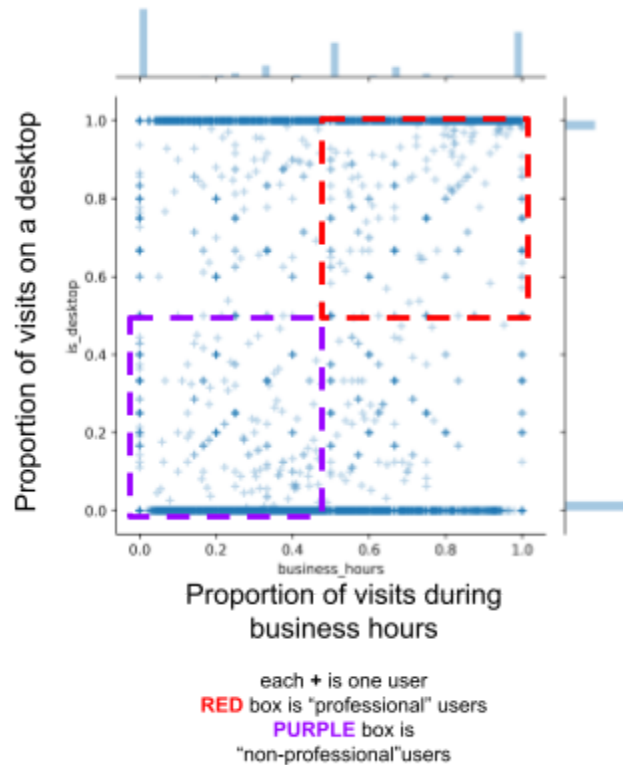
<u>Summary and comparison of user types</u>

Days Between Users First and Last Event Dates

	Desktop Business Hours	Mobile Evening
Average	42	21
Median	11	2
Maximum	430	426
Minimum	0	0
Number of Users	98335	307435

Days Between Users Individual Event Dates

	Desktop Business Hours	Mobile Evening
Average	22	19
Median	7	3
Maximum	396	409
Minimum	0	0
Number of Users	98335	307435

Distribution of users by desktop use and time of visit

Proportion of visits on a desktop (y axis: is_desktop)

Proportion of visits during business hours (x axis: business_hours)

each + is one user
RED box is "professional" users
PURPLE box is "non-professional"users

Each "+" indicates one user. For each user, we looked at all of their visits to the website and calculated the proportion of those visits that were during business hours (x axis) and the proportion of those visits that were from a desktop, rather than a mobile device (y axis). We used the 50% threshold for each of these axes to roughly separate the users into four groups, two of which we focused on: desktop + business hour users (purple box) and mobile + non-business hour users (red box). We use the set of users in the purple box to represent "professional" users (people who use ILAO resources for work or volunteer positions to help clients) and the red box to represent "non-professional" users (who use ILAO resources for themselves or their friends/families.
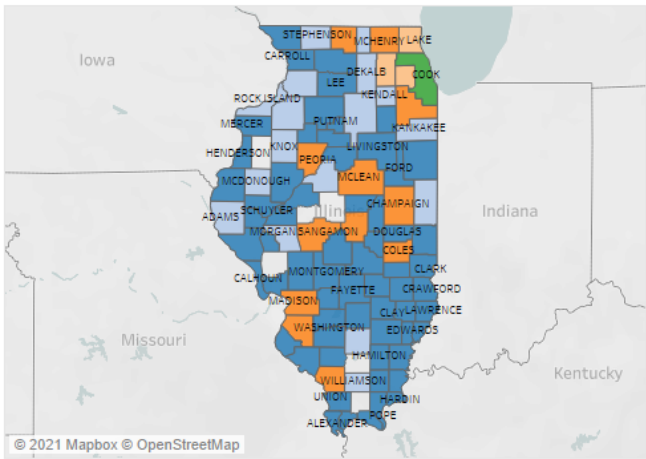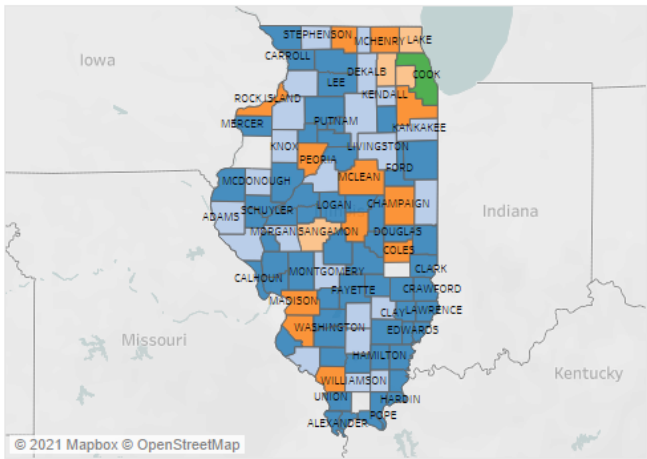
Mobile Nightime Users

Number of Users
- ■ <100
- ■ 100-499
- ■ 500-1,999
- ■ 2,000-9,999
- ■ 10,000-49,999
- ■ 50,000+
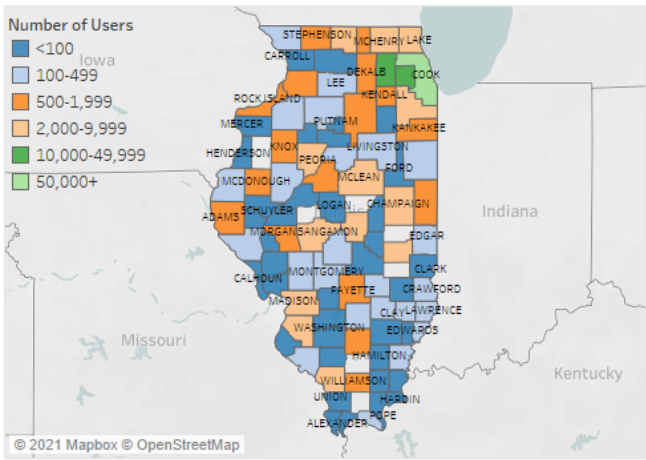
Mobile Business Hours Users
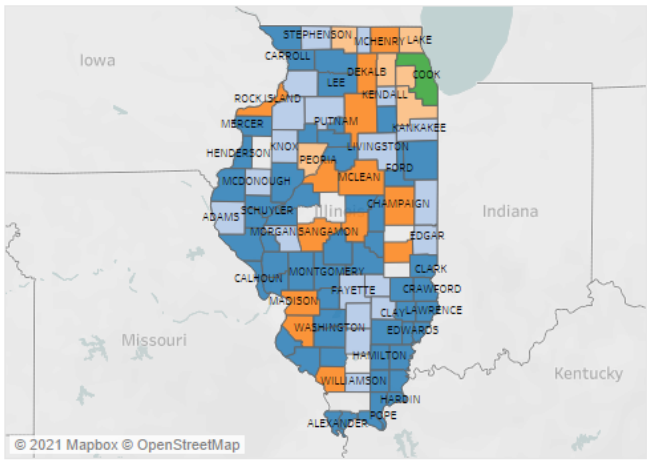
Desktop Nightime Users

Desktop Business Hours Users

Pages visited across content areas comparing Non-professional (mobile/nighttime) users to Professional (desktop/business hours) users
(exclude "procedural" content)

Mobile Nighttime Users: Top 15 Pages from Other Content Sections Viewed by People Who Looked at **Public Benefits** Pages

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Getting unemployment benefits	Unemployment Compensation	231
Can I receive unemployment benefits if I work a temp job?	Unemployment Compensation	134
Illinois State ID basics	Traffic	131
Application for a person with a disability ID card - blank	Traffic	128
DCFS cases and child protection services	Safety/Abuse	128
Application for unemployment benefits - online	Unemployment Compensation	121
Understanding DCFS investigations	Safety/Abuse	118
The low income home energy assistance program (LIHEAP)	Utilities	115
If I quit my job, can I get unemployment benefits?	Unemployment Compensation	108
Presentar una solicitud para beneficios de desempleo	Unemployment Compensation	105
Getting a divorce	Family (divorce)	96
3 types of orders of protection	Safety/Abuse	92
Applying for Medicaid	Health, public benefits	89

Desktop Business Hours Users: Top 15 Pages from Other Content Sections Viewed by People Who Looked at **Public Benefits** Pages

Content Title	Other Content Section	Number of Users
Am I eligible for Medicaid?	Health, public benefits	335
Getting a divorce	Family (divorce)	278
Applying for unemployment benefits	Unemployment	221
Divorce	Family (divorce)	214
Getting guardianship of an adult	Safety/abuse, Life planning	209
Getting guardianship of a child	Safety/abuse	208
Written eviction notices	Rental Housing	204
Getting unemployment benefits	Unemployment	186
Applying for Medicaid	Health, public benefits	180
Application for a person with a disability ID card - blank	Traffic	163
Starting a case for guardianship of an adult	Safety/abuse, Life planning	159
3 types of orders of protection	Safety/abuse	154
Expunging or sealing a criminal record	Employment	152
Petition for allocation of parental responsibility or custody - blank	Family (divorce)	151
Getting parental responsibilities or custody of a child	Family (divorce)	150

It is notable the most commonly viewed other content section by casual users was Unemployment Compensation while Unemployment Compensation didn't rank in the top 15 pages for professional users. Safety/abuse and Family (divorce) were similar between the two groups. Medicaid eligibility was also a top page for both user groups.

Mobile Nighttime Users: Top 15 Pages from Other Content Sections Viewed by People Who Looked at **Debt** Pages

Content Title	Other Content Section	Number of Users
Is bankruptcy right for me?	Housing (not rental)	73
Getting back an impounded car - Chicago	Traffic	67
Enforcing judgment liens against real estate	Housing (not rental)	57
Going to a hearing for an impounded car - Chicago	Traffic	40
Written eviction notices	Rental Housing	34
Basics of public utilities during the winter	Utilities	33
DCFS cases and child protection services	Safety/Abuse	33
Am I eligible for Medicaid?	Health, public benefits	31
Erasing overdue child support through Project Clean Slate	Family (divorce)	31
Getting a divorce	Family (divorce)	30
How much money can I make and still get SNAP benefits?	Public Benefits	30
Understanding DCFS investigations	Safety/Abuse	28
Getting an impounded car back - Chicago	Traffic	26
Understanding eviction as a tenant	Rental Housing	26
Driver's license suspension for accident or unpaid judgment	Traffic	25

Desktop Business Hours Users: Top 15 Pages from Other Content Sections Viewed by People Who Looked at **Debt** Pages

Content Title	Other Content Section	Number of Users
Getting a divorce	Family (divorce)	294
Written eviction notices	Rental Housing	256
Divorce	Family (divorce)	213
Evicting a tenant	Rental Housing	200
Getting guardianship of a child	Safety/abuse	192
Petition for allocation of parental responsibility or custody - blank	Family (divorce)	179
Understanding eviction as a tenant	Rental Housing	174
Ending the lease	Rental Housing	172
Getting parental responsibilities or custody of a child	Family (divorce)	170
3 types of orders of protection	Safety/abuse	164
Using a small estate affidavit	Life Planning	164
Getting guardianship of an adult	Safety/abuse, Life planning	163
Expunging or sealing a criminal record	Employment	162
Getting or returning a security deposit	Rental Housing	153
Enforcing judgment liens against real estate	Housing (not rental)	151

Casual users who looked at debt pages often also looked at pages with impounded car information. Rental housing pages related to eviction were often viewed by both groups. Casual and professional users viewing debt pages also often looked at pages with divorce information.

Mobile Nighttime Users: Top 15 Pages from Other Content Sections Viewed by People Who Looked at **Safety/Abuse** Pages

Content Title	Other Content Section	Number of Users
Petition for allocation of parental responsibility or custody - blank	Family (divorce)	406
Getting parental responsibilities or custody of a child	Family (divorce)	327
Starting a case to get parental responsibilities or custody	Family (divorce)	318
Can I terminate my ex's parental rights?	Family (divorce)	240
Getting a divorce	Family (divorce)	229
Parenting plan	Family (divorce)	182
Divorce	Family (divorce)	172
Motion to modify the allocation of parental responsibilities - blank	Family (divorce)	162
Becoming emancipated	Family	132
Enforcing a parental responsibilities or custody order	Family (divorce)	124
Calculating child support	Family (divorce)	122
How much money can I make and still get SNAP benefits?	Public Benefits	119
Parenting plan for parental responsibilities	Family (divorce)	115
Changing parental responsibilities or custody	Family (divorce)	108
Getting a divorce with children	Family (divorce)	104

Desktop Business Hours Users: Top 15 Pages from Other Content Sections Viewed by People Who Looked at **Safety/Abuse** Pages

Content Title	Other Content Section	Number of Users
Petition for allocation of parental responsibility or custody - blank	Family (divorce)	650
Getting a divorce	Family (divorce)	609
Divorce	Family (divorce)	567
Getting parental responsibilities or custody of a child	Family (divorce)	467
Getting guardianship of an adult	Safety/abuse, Life planning	419
Starting a case to get parental responsibilities or custody	Family (divorce)	405
Written eviction notices	Rental Housing	405
Starting a case for guardianship of an adult	Safety/abuse, Life planning	397
Motion to modify the allocation of parental responsibilities - blank	Family (divorce)	380
Parenting plan	Family (divorce)	369
Calculating child support	Family (divorce)	303
Child support modification	Family (divorce)	295
Evicting a tenant	Rental Housing	293
Criminal offenses that can be expunged or sealed	Crime	287
Getting a divorce with children	Family (divorce)	282

The overwhelming other content section viewed by casual and professional users was Family (divorce) and specifically pages with custody and parental responsibility information.

Mobile Nighttime Users: Top 15 Pages from Other Content Sections Viewed by People Who Looked at **Crime** Pages

Content Title	Other Content Section	Number of Users
Expunging or sealing a criminal record	Employment	301
¿Cuánto tiempo toma la deportación de una persona que ha sido detenida?	Citizenship	113
5 types of background checks when applying for a job	Employment	111
DCFS cases and child protection services	Safety/Abuse	98
Understanding DCFS investigations	Safety/Abuse	87
3 types of orders of protection	Safety/Abuse	85
Getting a job in health care after a conviction	Employment	65
I was indicated by DCFS	Safety/Abuse	65
Inmigrantes detenidos y audiencias de inmigración ante un juez	Citizenship	61
¿Qué quiere decir ser liberado bajo fianza como un inmigrante?	Citizenship	59
If I carry an ID, do I have to identify myself?	Citizenship	54
Fui detenido por inmigración (ICE)	Citizenship	52
Borrar o sellar un récord criminal	Employment	48
What happens after a DCFS investigation?	Safety/Abuse	48
Petition for allocation of parental responsibility or custody - blank	Family (divorce)	43

Desktop Business Hours Users: Top 15 Pages from Other Content Sections Viewed by People Who Looked at **Crime** Pages

Content Title	Other Content Section	Number of Users
Expunging or sealing a criminal record	Employment	728
Getting a divorce	Family (divorce)	306
3 types of orders of protection	Safety/abuse	265
Divorce	Family (divorce)	246
Written eviction notices	Rental Housing	243
Petition for allocation of parental responsibility or custody - blank	Family (divorce)	239
Getting guardianship of a child	Safety/abuse	226
Getting parental responsibilities or custody of a child	Family (divorce)	182
Evicting a tenant	Rental Housing	178
Understanding eviction as a tenant	Rental Housing	174
Getting guardianship of an adult	Safety/abuse, Life planning	169
Motion to modify the allocation of parental responsibilities - blank	Family (divorce)	169
DCFS cases and child protection services	Safety/abuse	162
Parenting plan	Family (divorce)	162
Starting a case to get parental responsibilities or custody	Family (divorce)	162

Across both user groups, Safety/abuse was another common other content section for people viewing Crime pages. Specifically pages related to DCFS. Casual users also often looked at Citizenship content particularly about immigration. This trend was not replicated by professional users.

Desktop Business Hours Users: Top 15 Pages from Other Content Sections Viewed by People Who Looked at **Family** Pages

Content Title	Other Content Section	Number of Users
Petition for allocation of parental responsibility or custody - blank	Family (divorce)	797
Getting parental responsibilities or custody of a child	Family (divorce)	561
Starting a case to get parental responsibilities or custody	Family (divorce)	528
Divorce	Family (divorce)	496
Getting a divorce	Family (divorce)	487
Parenting plan	Family (divorce)	468
Getting guardianship of a child	Safety/abuse	449
Motion to modify the allocation of parental responsibilities - blank	Family (divorce)	372
3 types of orders of protection	Safety/abuse	354
Child support modification	Family (divorce)	298
Starting a case for guardianship of a minor	Safety/abuse	288
Written eviction notices	Rental Housing	288
Calculating child support	Family (divorce)	277
Parenting plan for parental responsibilities	Family (divorce)	275
Getting child support	Family (divorce)	257

Mobile Nighttime Users: Top 15 Pages from Other Content Sections Viewed by People Who Looked at **Rental Housing** Pages

Content Title	Other Content Section	Number of Users
Basics of public utilities during the winter	Utilities	176
Contract for Deed home buyers' rights and obligations	Homeownership	131
DCFS cases and child protection services	Safety/Abuse	130
3 types of orders of protection	Safety/Abuse	124
Understanding DCFS investigations	Safety/Abuse	108
How to prevent a shut off by the utility company	Utilities	106
How much money can I make and still get SNAP benefits?	Public Benefits	97
Paying public utilities through my landlord	Utilities	91
Getting a divorce	Family (divorce)	80
Understanding foreclosure as a tenant	Housing (not rental)	75
The low income home energy assistance program (LIHEAP)	Utilities	68
Am I eligible for Medicaid?	Health, public benefits	65
I was indicated by DCFS	Safety/Abuse	65
Foreclosure timeline	Housing (not rental)	62
Petition for allocation of parental responsibility or custody - blank	Family (divorce)	61

Desktop Business Hours Users: Top 15 Pages from Other Content Sections Viewed by People Who Looked at **Rental Housing** Pages

Content Title	Other Content Section	Number of Users
Getting a divorce	Family (divorce)	524
Divorce	Family (divorce)	410
3 types of orders of protection	Safety/abuse	383
Getting guardianship of a child	Safety/abuse	357
Petition for allocation of parental responsibility or custody - blank	Family (divorce)	338
Getting guardianship of an adult	Safety/abuse, Life planning	311
Getting parental responsibilities or custody of a child	Family (divorce)	289
Expunging or sealing a criminal record	Employment	275
Starting a case for guardianship of an adult	Safety/abuse, Life planning	266
Using a small estate affidavit	Life Planning	258
Criminal offenses that can be expunged or sealed	Crime	240
Contract for Deed home buyers' rights and obligations	Homeowners	231
Getting an order of protection for domestic violence	Safety/abuse	225
Starting a case to get parental responsibilities or custody	Family (divorce)	225
Motion to modify the allocation of parental responsibilities - blank	Family (divorce)	224

Safety/abuse (specifically information about DCFS and other protection) and divorce content sections were frequently viewed by both casual and professional users.