

Data Mining : Using EBT DATA, GIS and Data Warehouse

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Kentucky Public Health

Prevent. Promote. Protect.





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Data Warehouse

- Received 2011 special grant to develop and implement
- Purpose:
 - Improve program management by providing tools for analysis and decisions
 - Provide standardized reports and queries
 - Allow user to analyze, visualize and share information
- Contains all of EBT data elements



Data Warehouse

- Name of Data Warehouse is wdICE
- Imports the following data from Universal Interface files which are created to transfer data between EBT and MIS systems on a nightly basis:
 - Redemption – all of EBT data elements
 - Issuance



Product and retailer data

wdICE

- Imports the following from MIS:
 - Demographics
 - Income
 - Risk Codes
 - Participation
 - Enrollment
 - Food Package data, etc.



Software

- Uses Tableau Software as front end
- Software allows users to :
 - View existing canned reports;
 - Create new reports; and
 - Share reports between users.



Components of wdICE

- Financial Management – Reporting of settlement trends and 798 data
- Retail Management – Analyze retailer redemption by store, region, day, month, quarter, and year, looking at specific products redeemed and their relative price patterns.



Components of wdICE – cont.

- Food Management - Analyze approved food products (cost to the program, availability in authorized stores, and preference and utilization shown by clients)
- Processing Metrics – Analyze redemptions by day, hours, week, etc.
- Risk Management - Identifies transactions patterns that might indicate fraudulent activities



Components of wdICE – cont.

- Participation and Reporting – Analyze participation and enrollment data including participants receiving specified food packages
- Participant Risk - Analyze participant characteristics including obesity rates and trends.



Whole Grain Data

• upc	comments	exchange size	Quantity
• 72945611030	Sara Lee 100% Whole Wheat Bread	16	125,944
• 72250017671	Nature's Own 100% Whole Grain Bread	16	95,087
• 24126008221	Bunny 100% whole wheat bread	16	65,682
• 73731071076	mission 8" whole wheat tortilla	16	13,943
• 14100071662	Pepperidge Farm Light Style Soft Wheat Bread	16	7,141
• 24126008931	Healthy life 100% whole wheat Bread	16	6,815
• 11110001320	Kroger 100% Whole Wheat Honey	16	6,374
• 77633700300	Roman Meal Sungrain 100% whole wheat bread	16	6,300



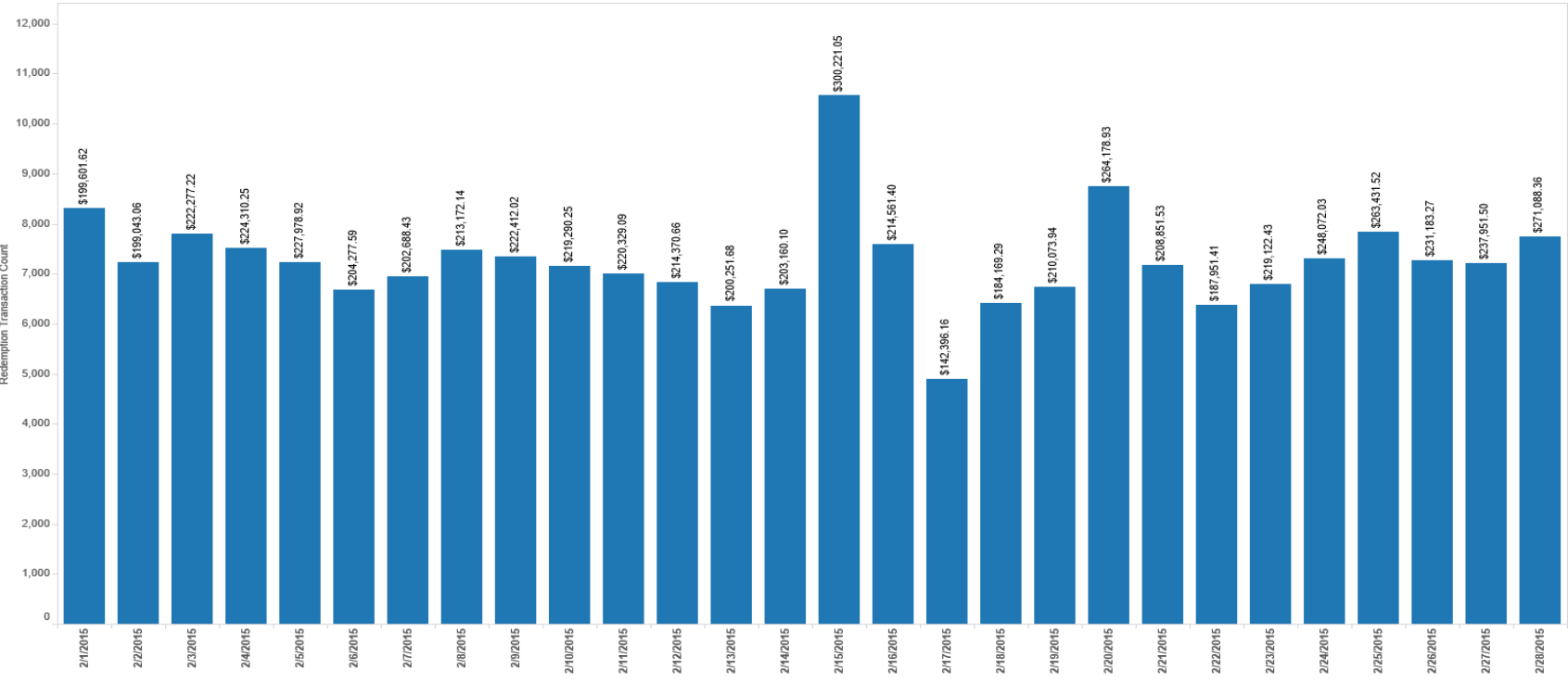
101 - Daily Settlement [February, 0]

(Select a settlement year and month on the right. The default is "last month". The labeled amount is the settlement amount for the day.)

Day of Settlement Date

Settlement Year
Default

Settlement Month
February

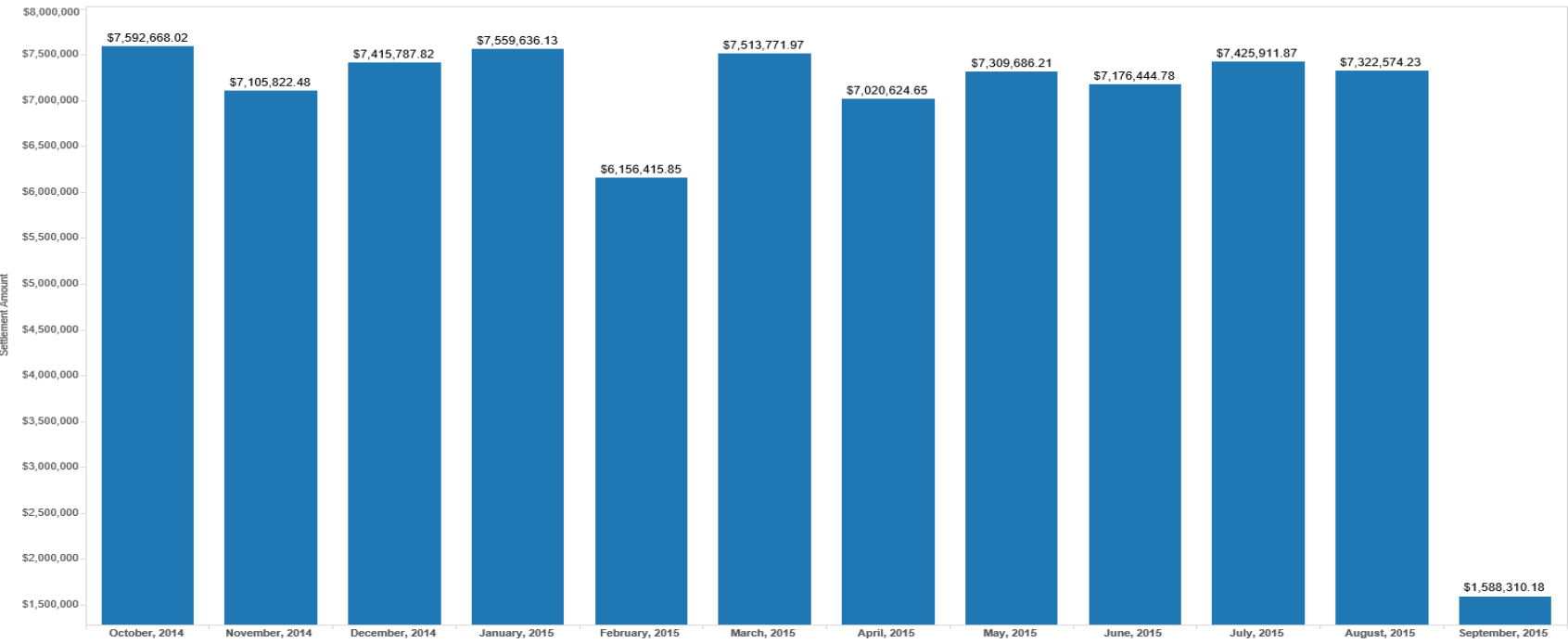


Browser navigation bar showing URL: https://wdice.cdpehs.com/views/100-FinancialManagementKY/106-Monthly...
 Tab: 106 - Monthly Settlement
 Navigation: Back, Workbook
 User: Wayne Smith (CDP)

106 - Monthly Settlement

Month of Settlement Date

Settlement Date
Last 12 months



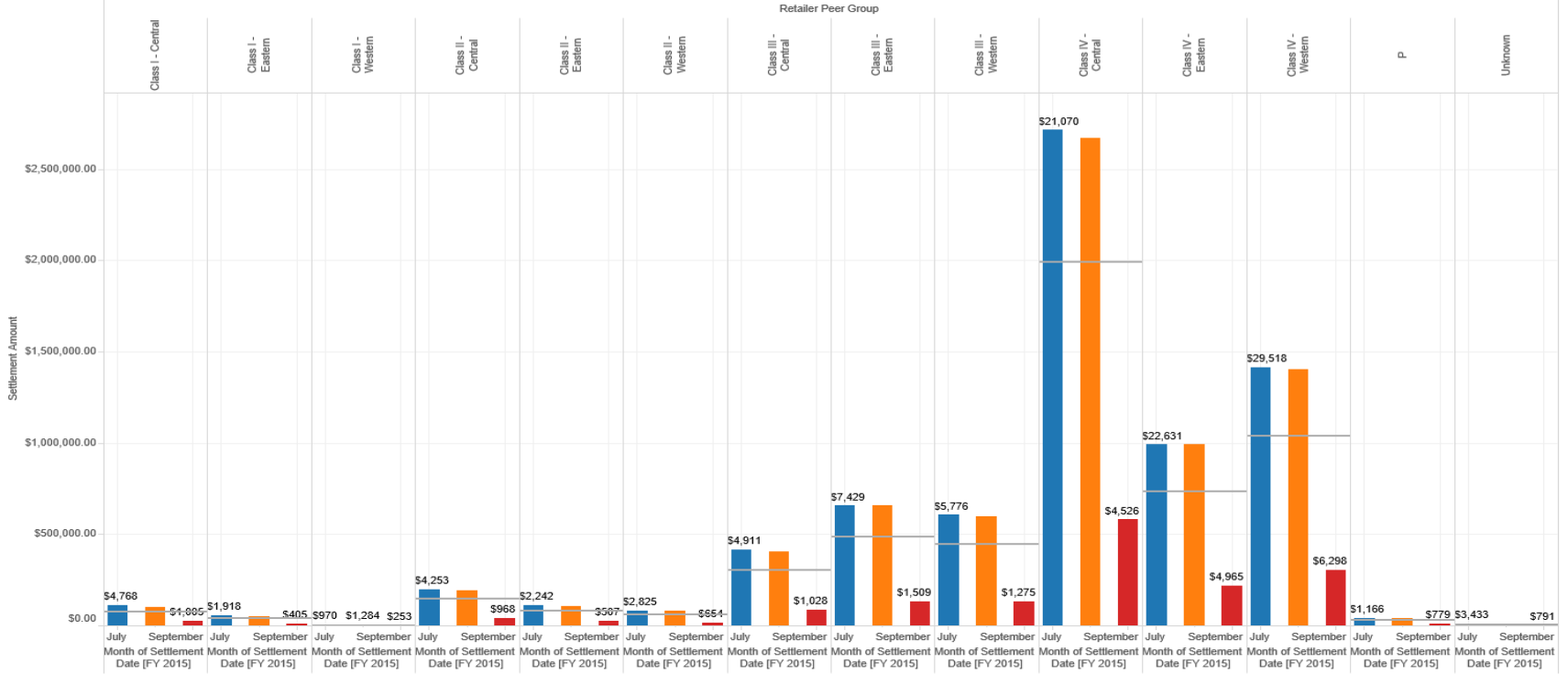
Redemptions-KY Data Last Refreshed: 9/9/2015 1:28:29 PM



107 - Monthly Settlement by Peer Group
(The label on top of the bars shows the average settlement per retailer. The line is the average settlement amount for the peer group.)

Settlement Date
Last 3 months

Settlement Month
 July
 August
 September



Redemptions-KY Data Last Refreshed: 9/9/2015 1:28:29 PM

Browser navigation bar showing URL: https://wdicos.cdpehs.com/views/200-RetailManagementKY/203-Productsw...
 Tab: 203 - Products with Big NTE | BigTime, Time Entry
 Menu: File Edit View Favourites Tools Help
 Navigation: IA-ND M&O - Home Elementool - Login bigtime Login CDP Extranet - Home Home - CDP Intranet etool SUGConnect SPIRIT JIRA Tableau Admin Paycheck wdicos Vendor High Risk - Report M...
 User: Wayne Smith (CDP)

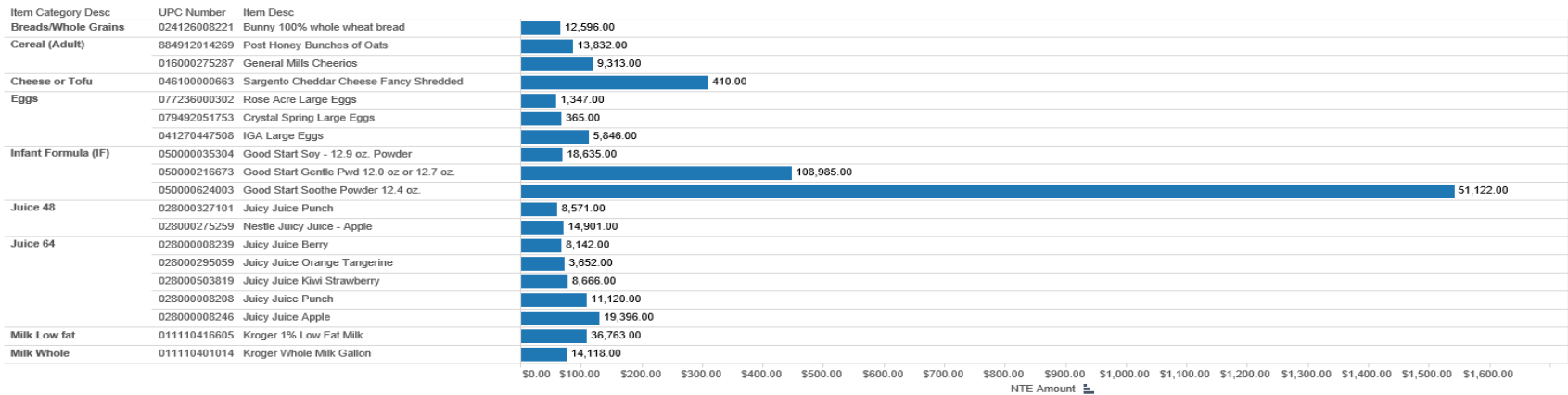
203 - Products Generating Significant NTE [August, 2015]

(Select a business year/month and a % of total NTE to see items with large NTE amounts. The label on the bar is the approved quantity.)

Business Year:

Business Month:

% of Total NTE Amount: 26.910552230%



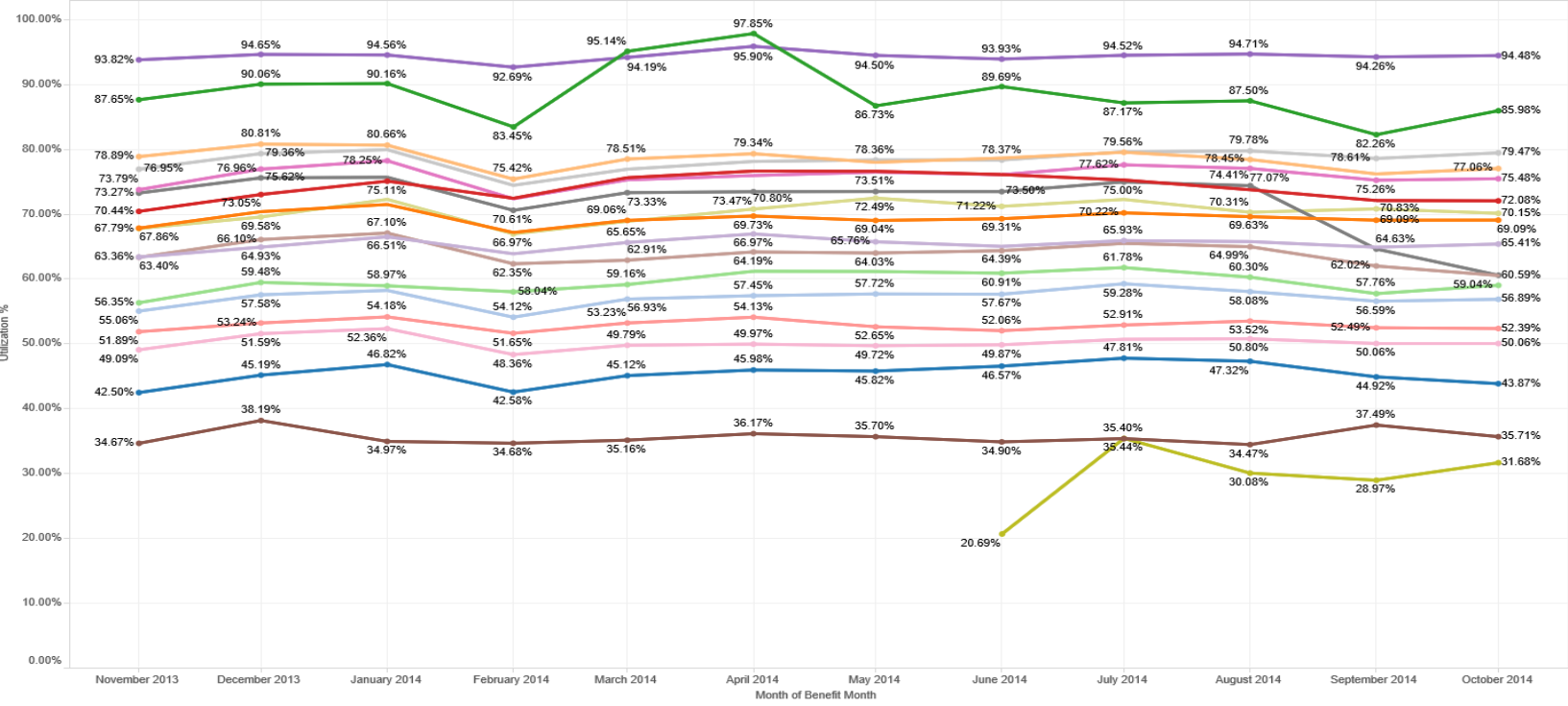
Redemptions-KY Data Last Refreshed: 9/9/2015 1:28:29 PM

309 - Benefit Utilization Trend

(Select a range of benefit months on the right. Utilization % for recent months may not be accurate due to the time lag between issuance and redemption.)

Benefit Month Range
 October 2013 - October 2014

- Benefit Category**
- Breads/Whole Grains
 - Cereal (Adult)
 - Cheese or Tofu
 - Eggs
 - Exempt Infant Formula (EXF)
 - Fish
 - Fruit & Vegetables Cash Value
 - Infant Cereal
 - Infant Formula (IF)
 - Infant Fruits and Vegetables
 - Infant Meats
 - Juice 48
 - Juice 64
 - Legumes
 - Milk Low fat
 - Milk Whole
 - Unknown
 - WIC Eligible Medical Foods (WEMF)



Reconciliation - KY Data Last Refreshed: 9/14/2015 7:39:04 AM

204 - Retailers with Big NTE Percentages [August, 2015]
 (Select a benefit year/month and an NTE adjustment % on the right. The default is "last month".)

er Name	Retailer Id	Redemption Transaction Count	Paid Amount	NTE Amount	NTE Adjustment %
	156896	131	\$5,240.53	\$1,467.58	22.11%
	156880	98	\$1,982.20	\$47.58	2.34%
	134284	24	\$206.86	\$1.20	0.58%
	310718	60	\$4,158.31	\$48.82	1.16%
	317099	32	\$619.06	\$7.02	1.12%
	317098	33	\$761.99	\$6.36	0.83%
	157003	38	\$759.48	\$5.69	0.74%
	156905	38	\$722.52	\$5.41	0.74%
	309313	97	\$2,493.44	\$17.42	0.69%
	134247	70	\$3,899.04	\$23.04	0.62%
	156899	28	\$599.05	\$3.25	0.54%
	134272	66	\$1,736.35	\$8.25	0.47%
	156098	52	\$1,932.45	\$7.72	0.40%
	169026	85	\$3,278.14	\$11.27	0.34%
	310677	12	\$160.64	\$0.55	0.34%
	134180	140	\$6,569.96	\$18.48	0.28%
	156967	21	\$765.92	\$1.97	0.26%
	124044	49	\$1,778.93	\$68.70	3.72%
	124041	74	\$2,557.45	\$61.31	2.34%
	302177	26	\$428.44	\$1.21	0.28%
	304245	56	\$1,404.82	\$27.04	1.89%
	321040	97	\$3,549.02	\$174.44	4.88%
	107011	13	\$186.70	\$4.23	2.22%
	145059	18	\$432.61	\$8.58	1.94%
	316261	66	\$2,156.91	\$12.01	0.55%
	312322	71	\$2,807.45	\$13.69	0.49%
	136156	87	\$1,520.11	\$6.97	0.46%
	313142	53	\$517.64	\$1.83	0.35%
	313499	117	\$3,171.36	\$9.51	0.30%
	312540	59	\$1,565.23	\$4.45	0.28%
	145058	12	\$169.04	\$0.43	0.25%
	148804	205	\$7,445.37	\$145.22	1.51%
	313116	400	\$11,580.88	\$196.29	1.67%

Redemptions-KY Data Last Refreshed: 9/9/2015 1:28:29 PM

208 - Expensive Purchases

208 - High Price for Specific Products [August, 2015 - Infant Formula (IF)]
 (Select a business year/month, category, and minimum shelf price to see applicable items & retailers.)

Item Id	Item Desc	Unit Of Measure	Retailer Peer Group	Retailer Name	Retailer Id	Avg. Shelf Price	Requested Quantity	Settlement Amount	Total Exchange Quantity
0000050000624010	Good Start Soothe Powder 12.4 oz.	Cont	Class IV - Western		304205	\$107.52	0.00	\$0.00	0.00
00000300871401518	Enfagrow Toddler Transitions 21/20 oz. Powder	Cont	Class IV - Central		156416	\$19.27	7.00	\$124.78	7.00
			Class IV - Western		314235	\$17.90	5.00	\$89.50	5.00
			Class IV - Western		314208	\$17.88	2.00	\$35.96	2.00
			Class IV - Eastern		302213	\$18.17	6.00	\$106.98	6.00
			Class IV - Eastern		163072	\$17.98	1.00	\$18.16	1.00
			Class IV - Eastern		145020	\$16.99	3.00	\$49.97	3.00
0000050000624003	Good Start Soothe Powder 12.4 oz.	Cont	Class I - Eastern		110003	\$18.99	4.00	\$71.25	4.00
			Class I - Eastern		148811	\$24.99	14.00	\$349.86	14.00
			Class I - Eastern		218127	\$24.98	2.00	\$49.98	2.00
			Class I - Eastern		180068	\$24.59	16.00	\$393.44	16.00
			Class I - Eastern		161066	\$24.89	7.00	\$174.93	7.00
			Class I - Eastern		313595	\$24.10	5.00	\$120.50	5.00
			Class I - Eastern		136121	\$23.99	22.00	\$527.78	22.00
			Class I - Eastern		161050	\$22.69	16.00	\$363.04	16.00
			Class I - Eastern		161117	\$21.59	21.00	\$461.79	21.00
			Class I - Eastern		107003	\$21.99	7.00	\$153.93	7.00
			Class I - Eastern		312454	\$21.49	7.00	\$150.43	7.00
			Class I - Eastern		318222	\$21.59	78.00	\$1,684.02	78.00
			Class I - Eastern		161074	\$21.35	25.00	\$533.75	25.00
			Class I - Eastern		113165	\$20.99	8.00	\$167.92	8.00
			Class I - Eastern		168018	\$20.48	4.00	\$81.98	4.00
			Class I - Eastern		169055	\$27.79	28.00	\$778.12	28.00
			Class I - Eastern		156858	\$36.99	14.00	\$377.86	14.00
			Class I - Eastern		134165	\$27.99	9.00	\$251.91	9.00
			Class I - Eastern		310715	\$25.99	30.00	\$779.70	30.00
			Class I - Eastern		156859	\$23.99	7.00	\$167.93	7.00
			Class I - Eastern		1561011	\$23.89	12.00	\$287.88	12.00
			Class I - Eastern		169018	\$22.99	1.00	\$22.99	1.00
			Class I - Eastern		309087	\$23.38	13.00	\$303.85	13.00
			Class I - Eastern		1561013	\$21.99	10.00	\$219.90	10.00
			Class I - Eastern		156215	\$21.99	15.00	\$329.84	15.00
			Class I - Eastern		156364	\$21.89	28.00	\$612.92	28.00
			Class I - Eastern		1561009	\$20.99	19.00	\$208.98	19.00

Redemptions-KY Data Last Refreshed 9/9/2015 1:25:20 PM

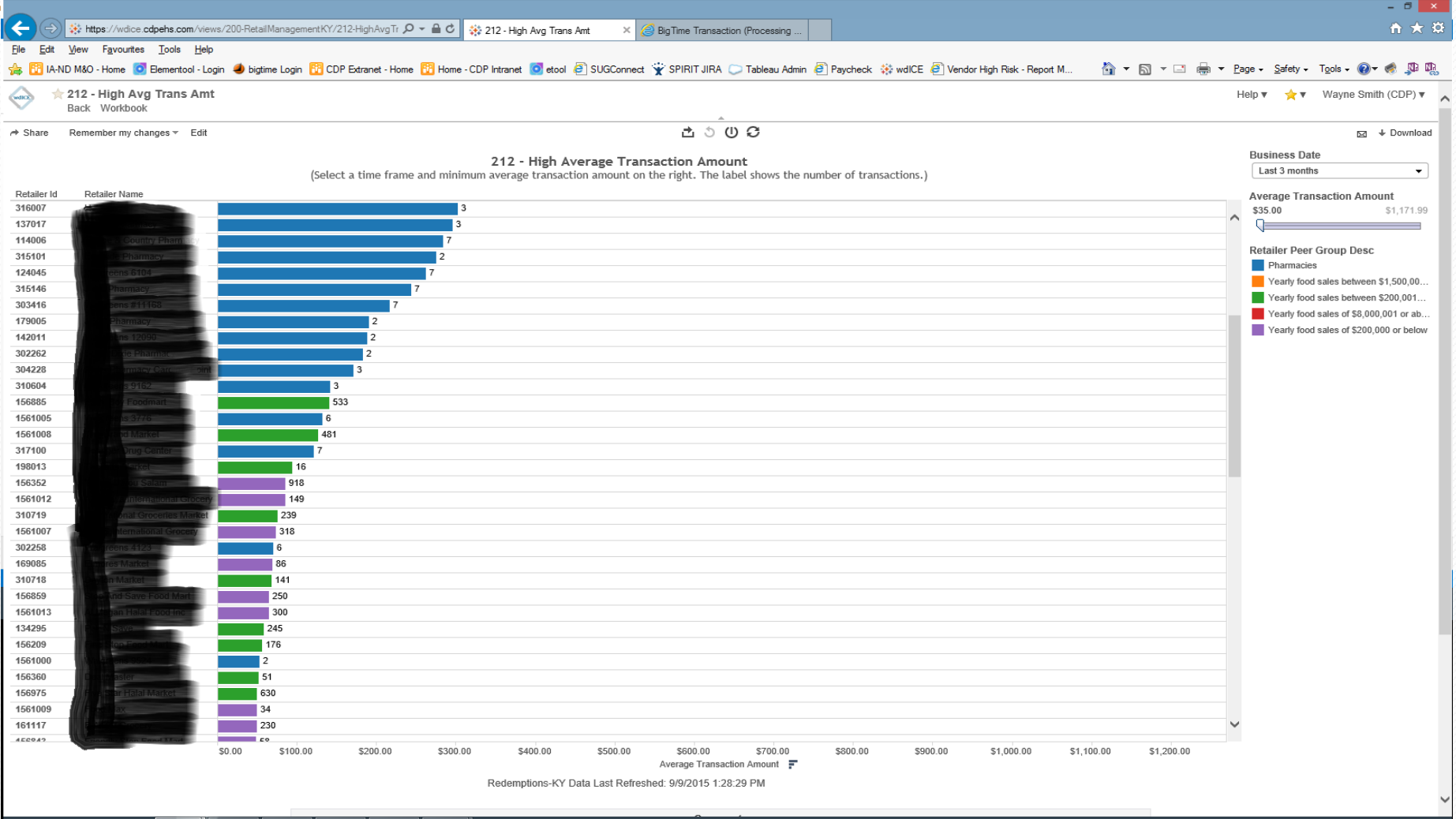
53 + Download

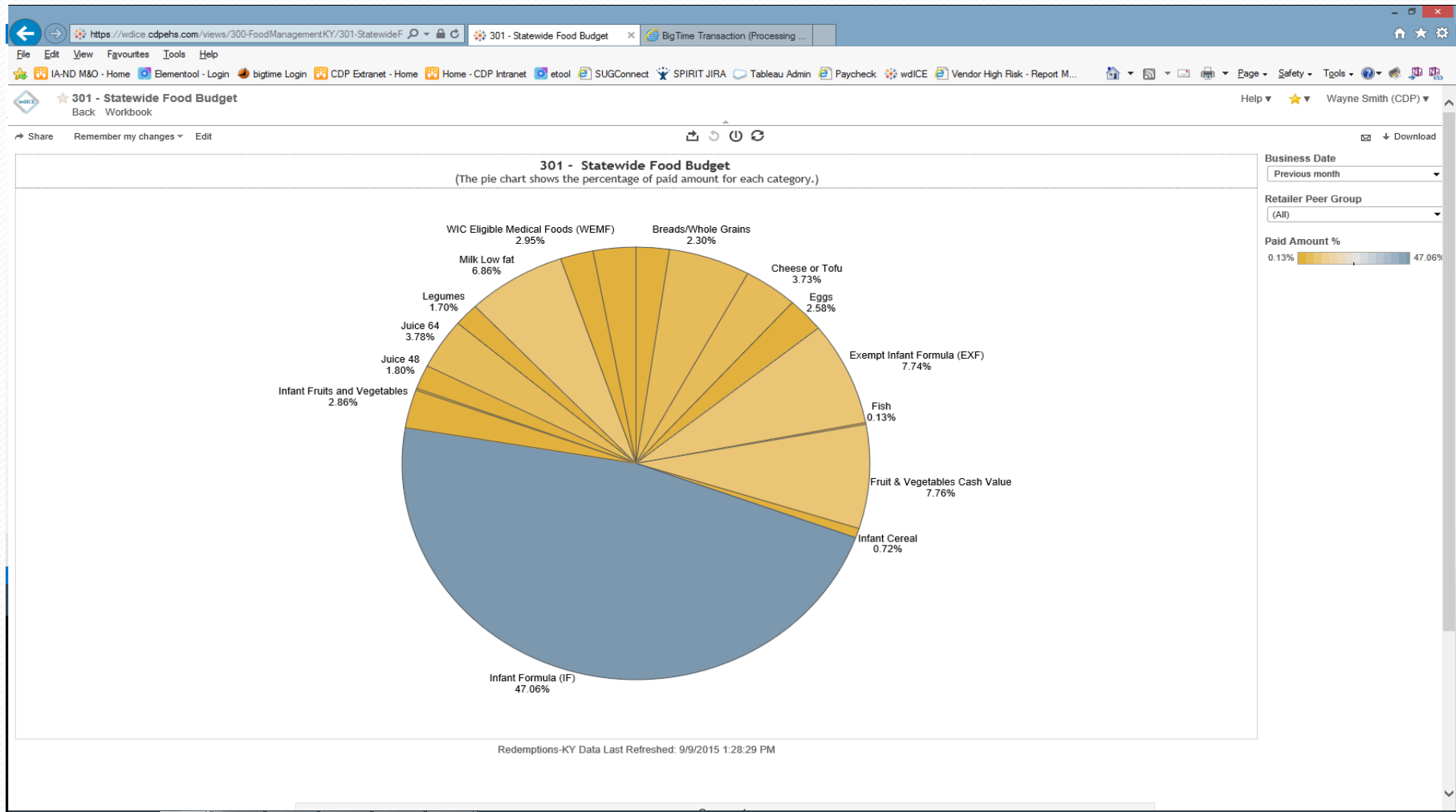
Business Year

Business Month

Item Category

Minimum Shelf Price





304 - Price Per Unit for Item Categories

Week of Settlement Date

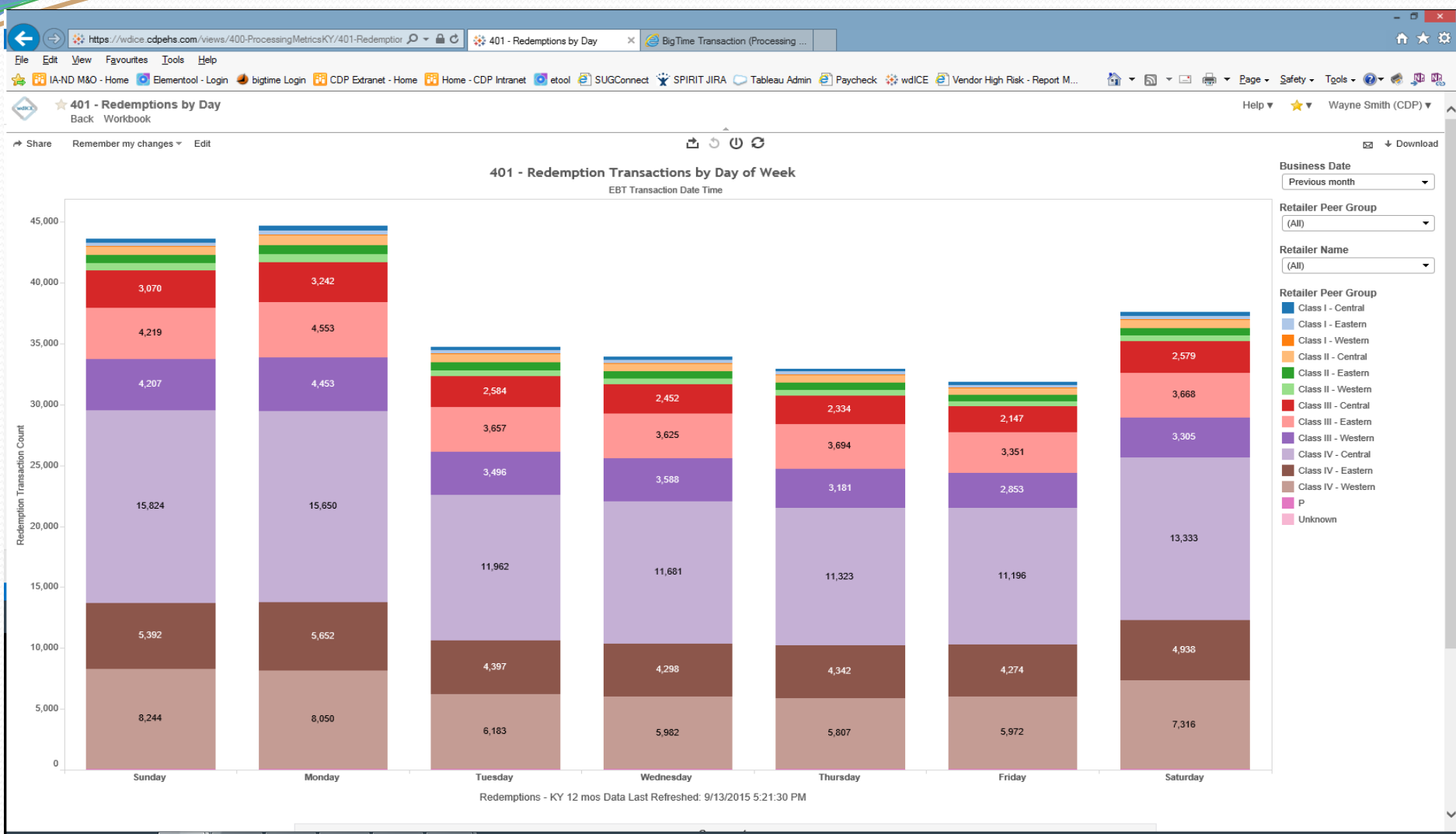
Item Category	Item Subcategory	Unit Of Measure	7/26/2015	8/2/2015	8/9/2015	8/16/2015	8/23/2015	8/30/2015
Breads/Whole Grains	Bread - 100% Whole Grain	Ounce	\$0.19	\$0.19	\$0.19	\$0.19	\$0.19	\$0.19
	Bread - 100% Whole Wheat	Ounce	\$0.17	\$0.17	\$0.17	\$0.17	\$0.17	\$0.17
	Brown Rice	Ounce	\$0.14	\$0.14	\$0.14	\$0.15	\$0.14	\$0.15
	Soft Corn Tortilla	Ounce	\$0.07	\$0.08	\$0.08	\$0.08	\$0.07	\$0.08
	Whole Wheat Tortilla	Ounce	\$0.15	\$0.15	\$0.15	\$0.15	\$0.14	\$0.15
Cereal (Adult)	Breakfast Cereal	Ounce	\$0.22	\$0.23	\$0.23	\$0.23	\$0.23	\$0.23
Cheese or Tofu	Cheese, Kosher	Pound			\$11.78	\$11.89		\$11.78
	Cheese, lowfat	Pound	\$5.94	\$5.98	\$5.92	\$5.97	\$5.96	\$5.98
	Cheese, regular	Pound	\$5.51	\$5.57	\$5.56	\$5.54	\$5.57	\$5.53
	Tofu	Pound	\$2.65	\$2.38	\$2.53	\$2.42	\$2.19	\$2.20
Eggs	Dozen Eggs	Dozen	\$2.44	\$2.59	\$2.72	\$2.80	\$2.81	\$2.80
	Calcilo XD Pwd	Cont					\$18.79	
Exempt Infant Formula (EXF)	EleCare For Infants Pwd	Cont	\$44.97	\$45.81	\$44.16	\$46.36	\$43.46	\$44.97
	Enf Premature w/lrn (24)	Cont				\$1.73	\$2.04	
	EnfaCare Pwd 12.8	Cont	\$18.05	\$17.85	\$17.81	\$17.83	\$17.99	\$17.89
	Enfamil Enfacare Lip RTF	Cont		\$9.79	\$9.47	\$8.29		
	GS Premature 24 RTF	Cont					\$3.75	\$3.75
	Neocate Inf Form Pwd	Cont	\$38.59	\$39.79	\$55.59	\$36.98	\$33.75	\$55.00
	NeoSure Exp Care 2oz RTF	Cont		\$1.02				
	Nutr Conc 13.0	Cont		\$11.44		\$7.99	\$11.31	\$12.47
	Nutr Enf flora LGG Pwd	Cont	\$25.27	\$25.77	\$25.82	\$25.98	\$26.01	\$26.61
	Nutramigen Toddler Pwd	Cont	\$25.32	\$31.94	\$32.77	\$25.32	\$25.32	
	Periflex Infant 400g	Cont			\$29.74	\$29.74		
	Preg Lipil Pwd 1 LB.	Cont		\$32.99	\$35.09	\$34.61	\$38.75	
	PurAmino/Nutramigen Pwd	Cont		\$42.95	\$66.19	\$51.42	\$61.40	
	Sim Alm ExpC Pwd 16 oz	Cont	\$30.28	\$30.55	\$30.61	\$30.60	\$30.44	\$30.17
	Sim Alm ExpC 1 Qt. RTF	Cont		\$10.18	\$10.20	\$10.17	\$10.34	\$9.99
	Sim Neo ExpC Pwd 13.1	Cont	\$17.90	\$18.49	\$18.34	\$18.48	\$18.55	\$18.46
	Sim Neo ExpC RTF 1 Qt.	Cont	\$8.28	\$10.61	\$8.41	\$8.44	\$8.41	\$8.36
	Sim PM 60/40 Pwd	Cont	\$17.98	\$30.00	\$17.42	\$16.29	\$16.29	\$17.98
	Sim SC Adv w/lr 24 RTF	Cont	\$1.98	\$2.99	\$1.98	\$3.66	\$1.98	
	Similac Spec Care 30 RTF	Cont						\$43.72
Fish	Light tuna	Ounce	\$0.19	\$0.20	\$0.19	\$0.20	\$0.20	\$0.20
	Salmon	Ounce	\$0.35	\$0.34	\$0.33	\$0.35	\$0.33	\$0.33
	Sardines	Ounce	\$0.30	\$0.62	\$0.50	\$0.60	\$0.38	\$0.52

Redemptions-KY Data Last Refreshed: 9/9/2015 1:28:29 PM

Business Date: Previous month

- Item Category
- (All)
 - Breads/Whole Grains
 - Cereal (Adult)
 - Cheese or Tofu
 - Eggs
 - Exempt Infant Formula (EXF)
 - Fish
 - Fruit & Vegetables Cash Value
 - Infant Cereal
 - Infant Formula (IF)
 - Infant Fruits and Vegetables
 - Infant Meats
 - Juice 48
 - Legumes
 - Milk Low fat
 - Milk Whole
 - WIC Eligible Medical Foods (...)





Browser: https://wdice.cdpehs.com/views/500-RiskManagementKYProd/505-Riskbyx... 505 - Risk by County | BigTime Transaction (Processing ...)

Navigation: IA-ND M&O - Home | Elementool - Login | bigtime Login | CDP Extranet - Home | Home - CDP Intranet | etool | SUGConnect | SPIRIT JIRA | Tableau Admin | Paycheck | wdICE | Vendor High Risk - Report M...

505 - Risk by County | Back | Workbook | Help | Wayne Smith (CDP)

505 - Risk by County

(Click a county to see retailer risk indicators below.)

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Fiscal Year: FY 2014

Retailer Peer Group: (Multiple values)

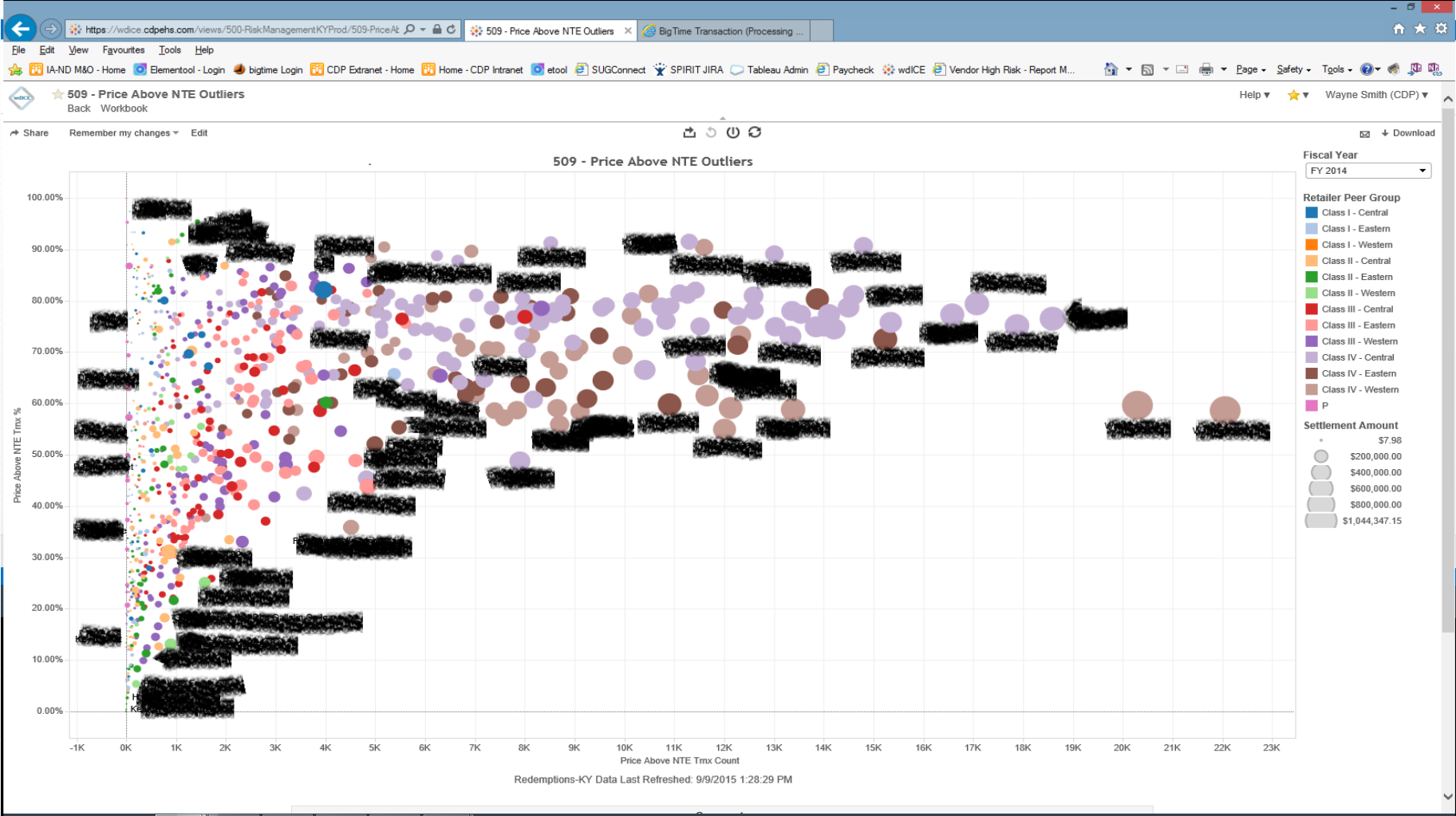
High Risk Points: 35 (Scale: 0 to 4,436)

Retailer Peer Group Legend:

- Class I - Central
- Class I - Eastern
- Class I - Western
- Class II - Central
- Class II - Eastern
- Class II - Western
- Class III - Central
- Class III - Eastern
- Class III - Western
- Class IV - Central
- Class IV - Eastern
- Class IV - Western

Retailer Id	Retailer Name	Abnormal Milk Trmx %	Full Redemption Trmx %	Whole Dollar Trmx %	Settlement % Out Of Contract	Price Above NTE Trmx %
136139	[REDACTED]	0.00%	0.00%	0.00%	7.24%	31.65%
309313	[REDACTED]	0.09%	0.00%	0.00%	1.39%	86.81%
133203	[REDACTED]	0.00%	0.00%	0.00%	67.43%	62.41%
136121	[REDACTED]	0.00%	0.00%	0.17%	3.24%	79.83%
145041	[REDACTED]	0.00%	0.00%	0.00%	0.00%	54.68%
310102	[REDACTED]	0.00%	0.00%	0.25%	16.14%	74.75%
316222	[REDACTED]	0.35%	0.00%	0.17%	8.10%	65.72%
314187	[REDACTED]	0.00%	0.00%	0.00%	2.28%	19.39%
309295	[REDACTED]	0.00%	0.00%	0.21%	0.89%	87.73%
311090	[REDACTED]	1.43%	0.00%	0.00%	26.79%	39.43%
313398	[REDACTED]	0.11%	0.00%	0.03%	3.74%	11.31%
164002	[REDACTED]	0.00%	0.00%	1.15%	10.66%	76.22%
169054	[REDACTED]	0.34%	0.00%	0.00%	21.49%	45.35%
161117	[REDACTED]	1.97%	0.00%	0.44%	1.09%	65.79%
309209	[REDACTED]	0.00%	0.00%	0.00%	0.00%	89.13%





616 - Clinics with Highest Avg. BMI

Reporting Month: Last 6 months

WIC Status Age Group: (All), Children, Infants, Women

Participant Age (Months): 25 (1383)

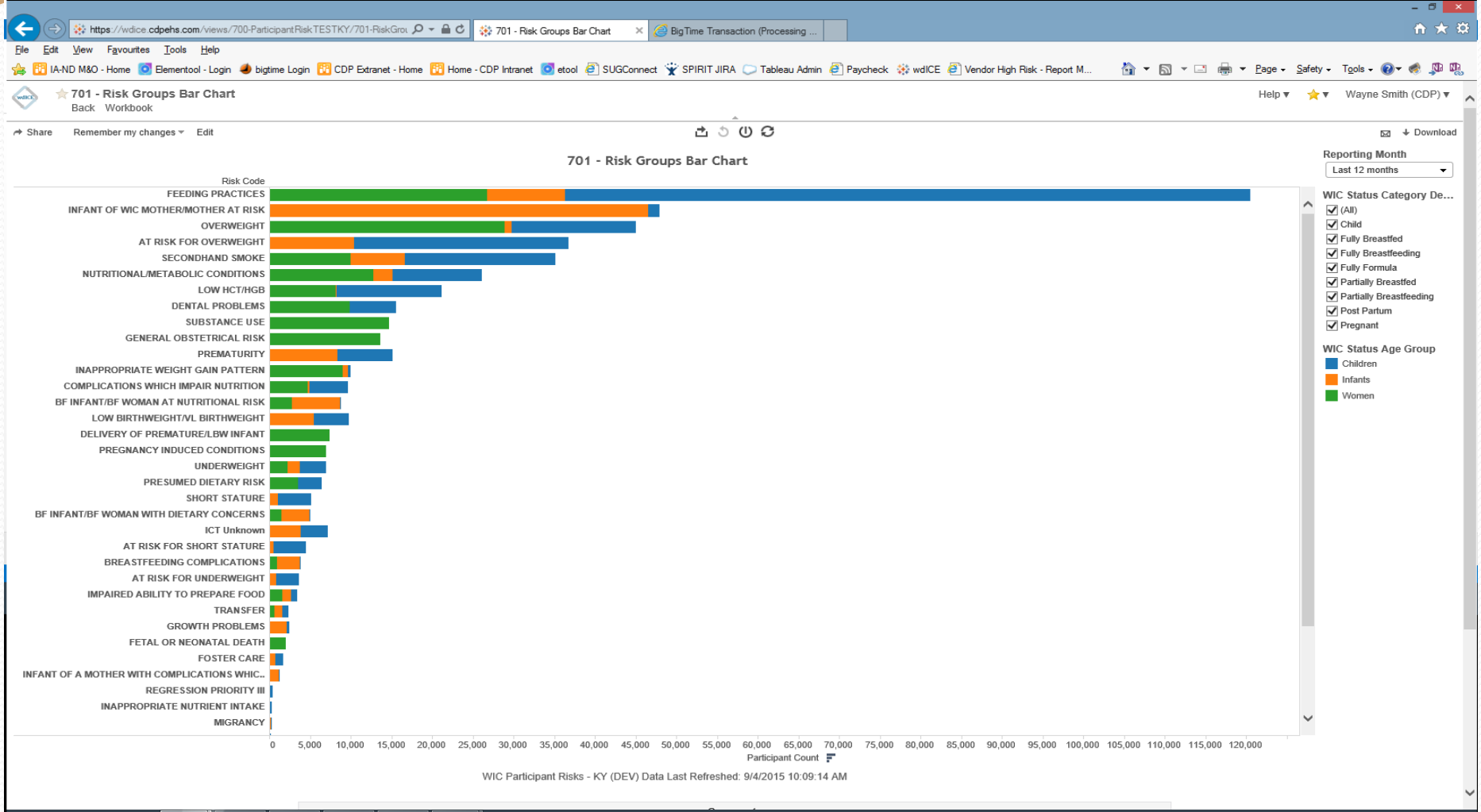
Avg BMI: 18.0 (30.0)

Avg BMI: 20.2 (28.8)

024024A 28.8 3,696	313026A 23.5 1,810	014014 23.0 1,349	315105 22.7 2,080	087087A 22.6 1,990	048048A 22.4 2,274	076076B 22.2 1,579	309044 22.0 696	314046 22.0 576	079079 22.0 1,793	304053 22.0 277	314117 22.0 723	317021 21.9 1,033	061061 21.9 3,156	314113 21.9 726	316088 21.9 1,112
040040 26.2 1,427	089089 23.3 2,146	Unknown 23.0 179	120120 22.7 1,123	025025 22.5 2,531	042042 22.3 2,727	311032 22.2 754	056056H 21.8 8,260	309001 21.8 1,269	056056T 21.8 2,846	309027 21.8 1,025	045045B 21.8 228	303085 21.8 950	048048B 21.7 464	318072 21.6 410	312119 21.6 875
077077 24.4 1,249	037037 23.3 2,338	321081 22.9 960	057057 22.7 2,757	076076A 22.5 3,517	118118B 22.3 2,140	309100A 22.2 3,972	309109 21.8 1,921	018018A 21.5 2,146	007007B 21.5 1,739	305108 21.5 892	315091 21.5 540	002002 21.5 1,919	317039 21.4 818	069069 21.4 1,759	312080 21.4 1,324
098098B 23.9 609	058058 23.1 1,792	303114A 22.9 6,243	302090 22.7 2,313	309116 22.5 2,179	110110 22.3 880	312065 22.2 705	024024C 21.6 5,072	302082 21.4 1,486	035035 21.3 1,250	309074 21.3 2,100	302047C 21.3 1,009	036036E 21.3 1,189	316083A 21.2 687	305052 21.2 924	
312067 23.8 1,450	312097A 23.1 2,367	314030A 22.9 4,443	304004 22.6 677	056056C 22.5 5,311	302078 22.3 1,249	302115 22.1 847	084084 21.6 1,428	309029 21.4 777	080080 21.2 1,082	310008 21.1 4,744	303016 20.8 974	043043 20.8 2,139	304038A 20.6 271		
314051 23.7 2,085	054054A 23.1 2,901	033033 22.8 1,048	034034C 22.6 8,183	302047A 22.5 5,311	304038B 22.3 447	304073A 22.1 3,964	316103A 21.6 1,934	313055 21.4 1,241	318111 21.2 985	314075 21.1 496	309023 21.0 1,453	310059A 20.5 4,567	314030C 20.2 736		
098098A 23.7 3,188	056056U 23.1 6,443	303050 22.8 1,417	015015 22.6 2,839	064064 22.4 1,207	034034F 22.2 5,053	316006 22.1 1,044	012012 21.6 602	311022A 21.5 2,250	304020 21.4 464	093093 21.1 1,351	318028 21.0 696	318070 20.4 772	314117F 20.2 135		
036036 23.6 1,798	315049 23.1 1,026	317096 22.8 526	086086 22.6 1,017	303031 22.4 731	313102 22.2 1,370	056056G 22.1 3,317	318017 21.5 1,146	068068 21.4 1,215	310019A 21.1 3,225	312066 20.9 1,349	310041 20.3 2,154				
356356 23.6 2,802	303005 23.1 3,013	305106 22.8 2,063	303071 22.6 1,847	309104 22.4 1,491	314092 22.2 1,887	303107 22.1 1,102	317094 21.3 614								
099099 23.5 1,093	011011 23.1 1,363	056056E 22.7 1,600	063063 22.6 4,556	305112 22.4 574	656656 22.2 4,228	321101 22.1 282									
010010A 23.5 2,454	312095 23.0 562	045045 22.7 1,403	302062 22.6 858	009009 22.4 1,353	003003 22.2 1,081	118118A 22.1 2,271	007007A 21.5 1,761								

WIC Participation - KY (DEV) Data Last Refreshed: 9/11/2015 3:58:04 PM





Data

- WIC Participant Risks - KY (DEV)
- WIC Participation - KY (DEV)

Dimensions

- Clinics
- Households
 - Household Address
 - Household Area Code
 - Household City
 - Household County
 - Household County FI...
 - Household Id
 - Household Income
 - Household Income As...
 - Household Income Qu...
 - Household Last Name
 - Household Number
 - Household State
 - Household Time Zone
 - Household WIC Region
 - Household Zip Code
 - Household Zip Code...
 - Number In Household
- Participant Risks Info
- Participants
- Risk Factors
- WIC Priority
- WIC Status
- Now
 - sys_row_is_current (Hou...
 - Measure Names

Measures

- Clinic Count
- Household Count
- Participant Count
- Participation Risk %
- Participation Risk Count
- Latitude (generated)
- Longitude (generated)
- Measure Values

Pages

Filters

- Risk Factor Code
- Reporting Month Date
- Household State: Kentu...

Marks

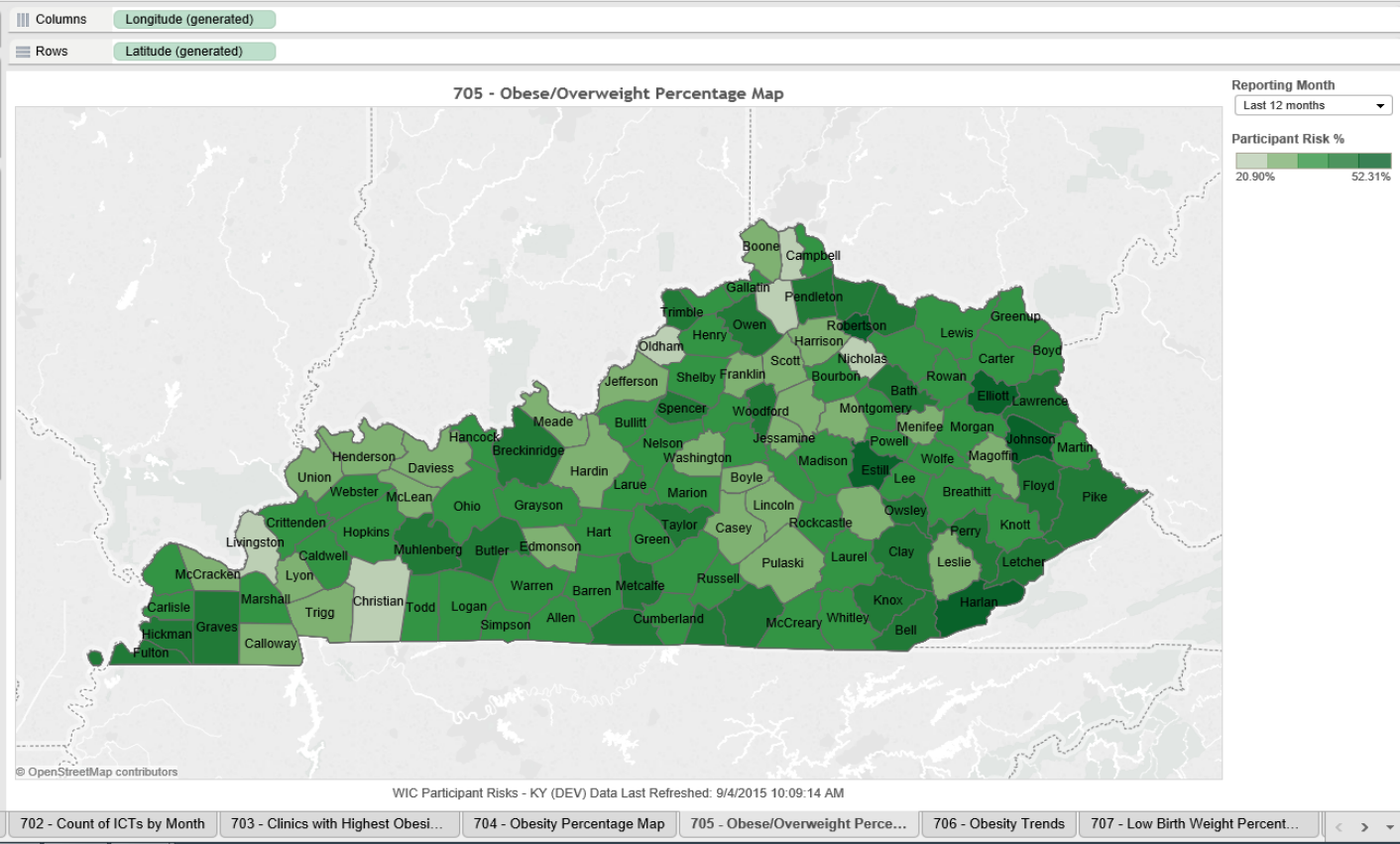
Filled Map

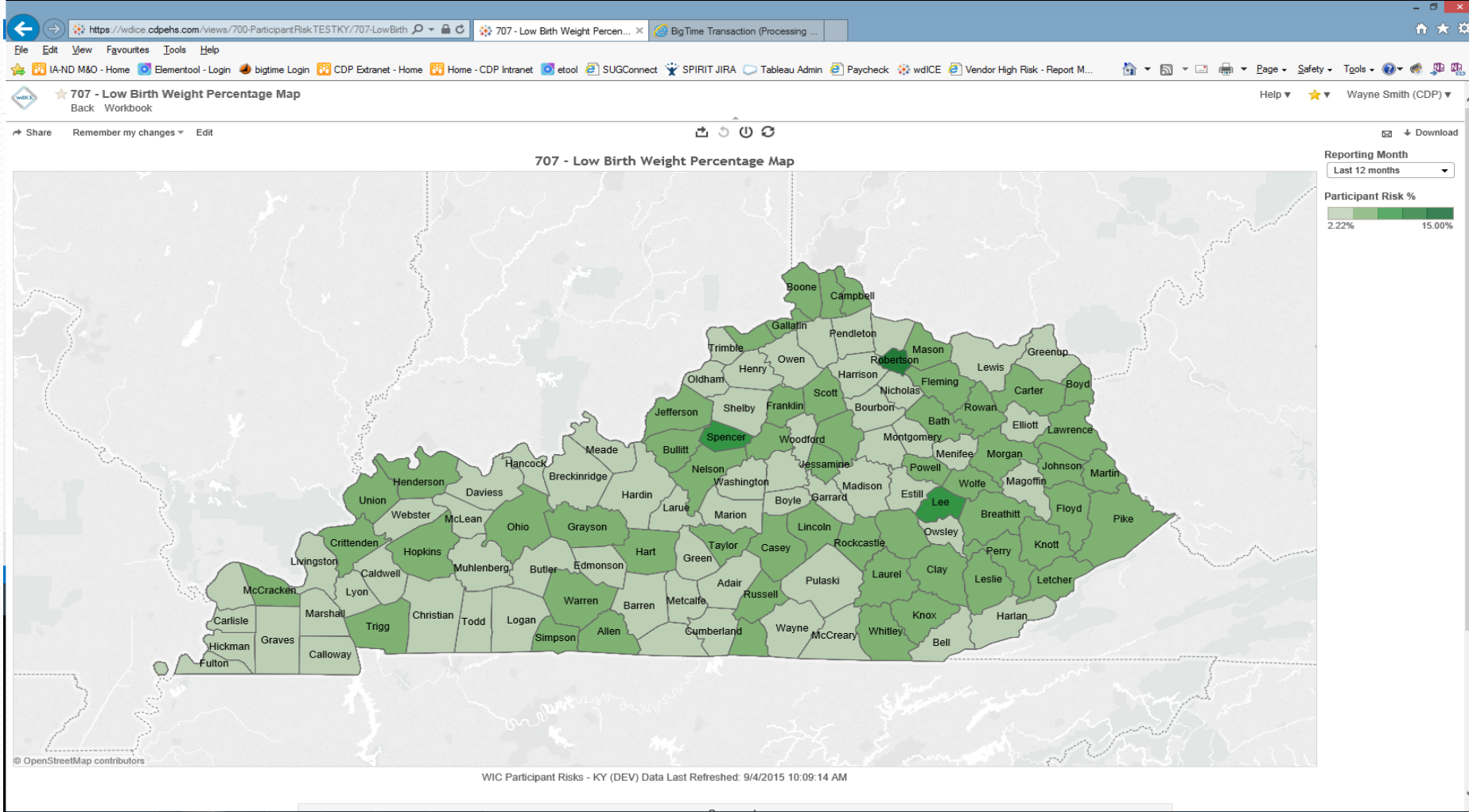
Color Size Label

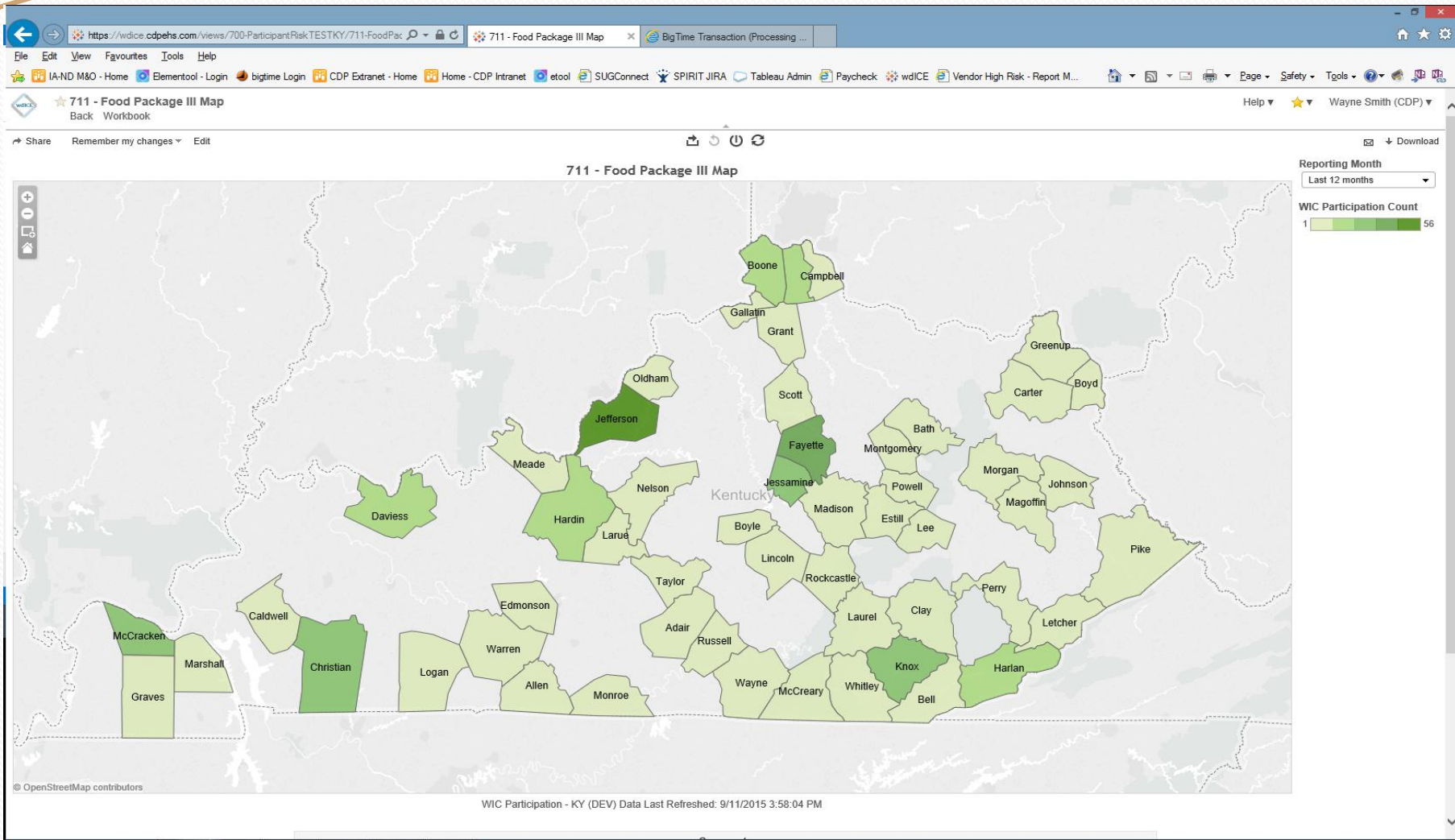
Detail Tooltip

AGG(Participation...)

- Household County
- Household State
- Household County
- SUM(Participation...)
- SUM(WIC Particip...)







Data to Analyze

- Have about 89 reports
- Primary uses:
 - Food List decisions
 - High Risk vendor decisions
 - Review of participants by area



SO MUCH DATA!

SO LITTLE TIME!



Questions?

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