

Discovering Food Stamp Fraud Using ArcIMS and WebFOCUS

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Louisiana's GBIS Application

- Using ArcIMS and WebFOCUS, Louisiana Department of Social Services (DSS) has developed an application that provides investigators the capability to analyze redemption trends in the food stamp program.
- WebFOCUS components provide the data-mining, extraction and reporting capabilities required to analyze large volumes of data while the ArcIMS components deliver a spatial dimension that adds a unique insight into redemption patterns.
- This presentation will outline the issues encountered in the development of this application as well as the benefit derived by the State of Louisiana.

Food Stamp Program Nationally

How it is organized

- ❑ Administered by the USDA. It is the largest primary source of nutrition assistance for low income people.
- ❑ The USDA pays the full cost of food stamp benefits and pays about half the cost of state administration.
- ❑ States handle day-to-day operation and management (certifying participants, benefits delivery, and monitoring compliance).

Food Stamp Program Nationally

Current Events

- Currently about 95% of the benefits are issued electronically (EBT Program).
- The EBT program has reduced administrative workloads and costs as well as providing greatly enhanced government oversight of the Food Stamp Program.
- Size of the program
 - 8.4 million households, representing about 19 million individuals redeem \$1.7 billion in FSP benefits every month via EBT.

Food Stamp Program Nationally Regulations

- Food stamps can be used to buy FOOD
 - Breads, cereals, dairy products, canned/frozen foods;
 - Fruits, vegetables, meats, fish, and poultry.
- They can't
 - be used to purchase nonfood items such as paper products, soaps, household supplies, pet foods, vitamins, medicines, hot foods, or foods that will be eaten in the store;
 - be used to purchase alcohol or tobacco;
 - be traded for cash (this is known as trafficking or discounting).
- The FSP is a nutrition program, not welfare. It is designed to help the underprivileged purchase food and when individuals sell benefits, it violates the intent of the program as well as the law.

Food Stamp Program Nationally Enforcement of Regulations

- ❑ Each EBT transaction provides an audit trail which provides extensive information that is beneficial to fraud investigators.
- ❑ EBT has revolutionized the way fraud investigations are conducted.
- ❑ The “**Anti-fraud Locator using EBT Retailer Transactions**” (**ALERT**) application monitors and tracks electronic retail transactions and identifies potentially high-risk retailers based on patterns in transaction data commonly associated with trafficking.
- ❑ In certain instances, administrative cases are initiated in which retailers are charged with trafficking based solely on suspicious patterns in the transaction data.

Food Stamp Program Louisiana Profile

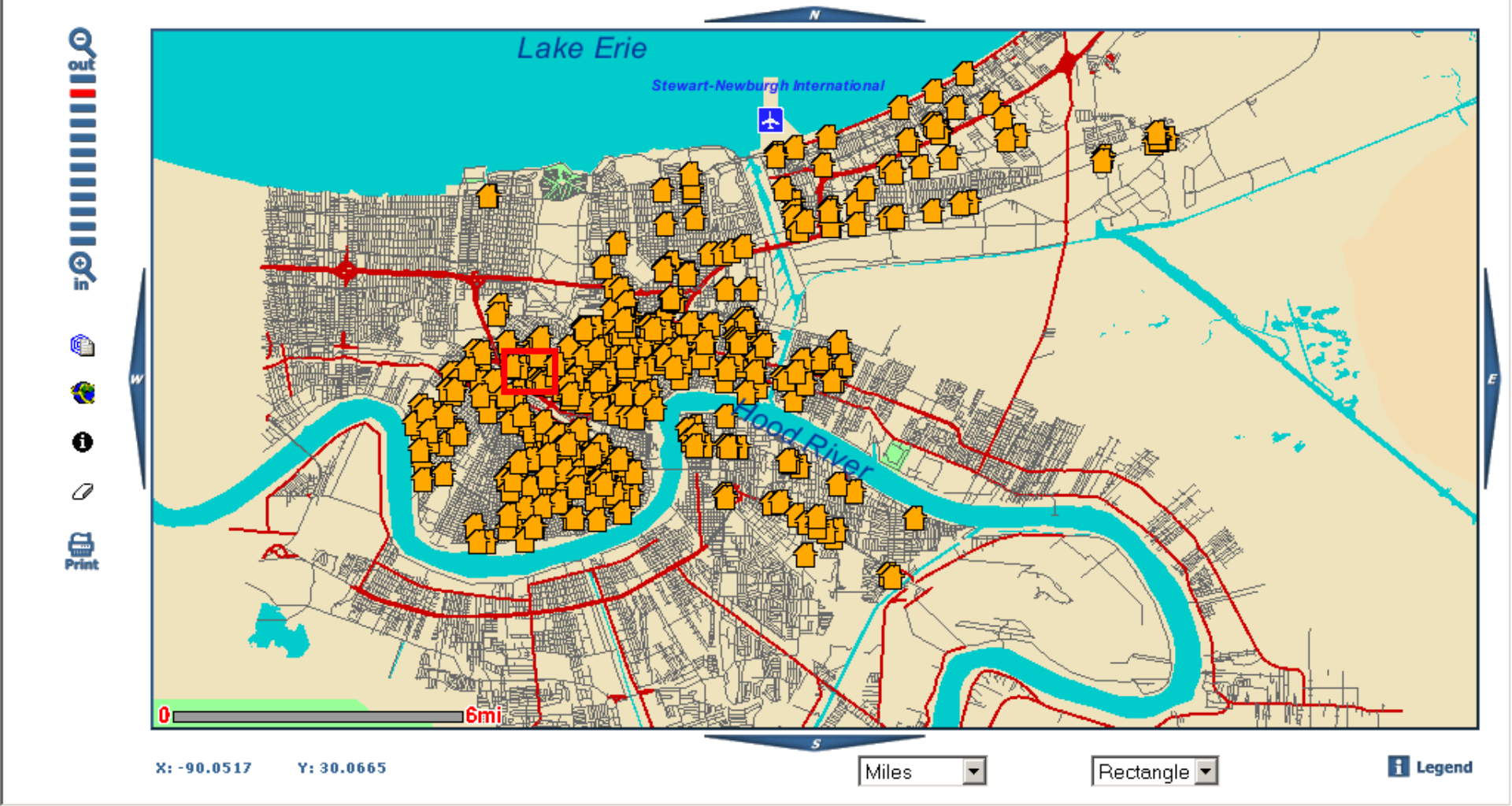
- Size of the program
 - Approximately 270 thousand households each month receive benefits;
 - 3,342 authorized food retailers.
- Administration of the program
 - Department of Social Services (DSS)
 - Each parish takes applications and enrolls eligible participants
 - Office of Family Support / Fraud Recovery Section (OFS/FRS) reviews records for compliance.

Louisiana Fraud Timeline

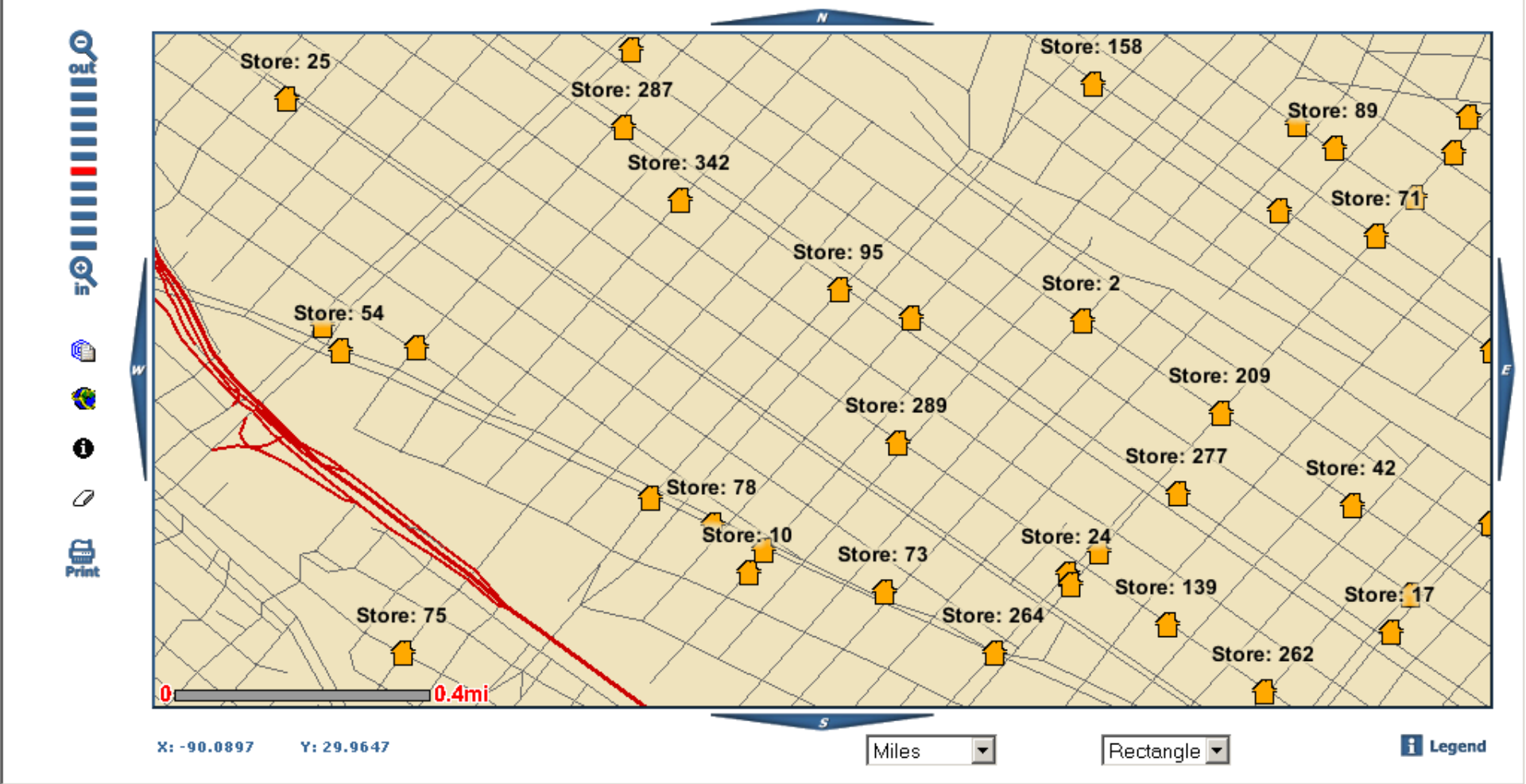
(total elapsed time ~ 4 years)

- Pre-Jurassic period
 - DSS used archived mainframe reports and Interactive SQL requests to conduct investigations.
 - This limited usage to relatively technically oriented investigators and generally made the process inefficient.
- Early colonial times
 - WebFOCUS was introduced. A wide variety of users analyze transaction-level data through a web browser.
 - Still, there were relationships in the underlying data that were not apparent.
- The 21st century
 - In 2003, Louisiana DSS commissioned Information Builders to enhance their fraud application by adding a spatial dimension.

Information Builders. WebFOCUS GIS Adapter - Business Intelligence and Map Interaction 



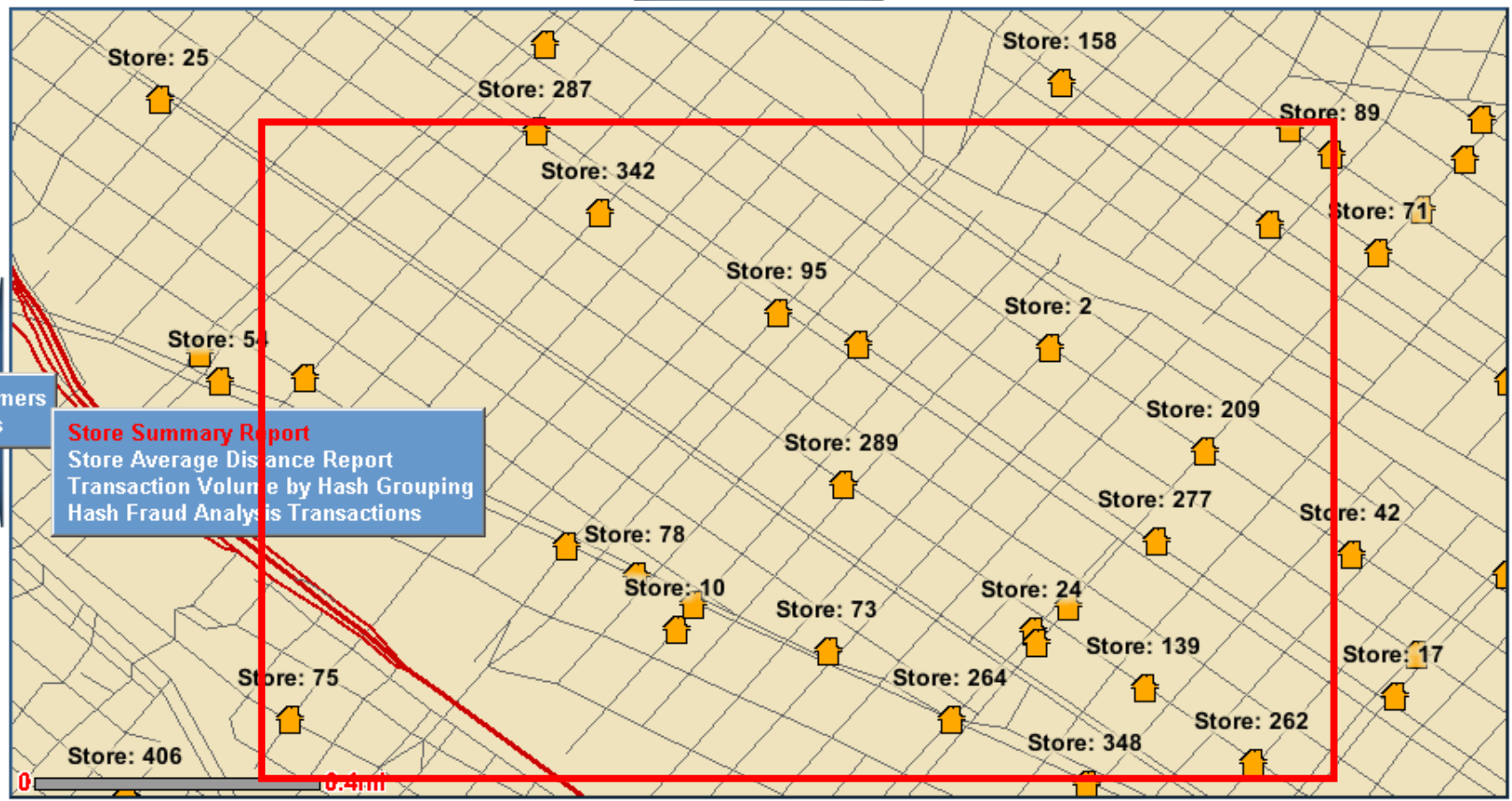
Information Builders. **WebFOCUS** GIS Adapter - Business Intelligence and Map Interaction 





Customers Stores

Store Summary Report
Store Average Distance Report
Transaction Volume by Hash Grouping
Hash Fraud Analysis Transactions



X: -90.1041 Y: 29.9678

Miles

Rectangle

Legend

Store Report Launch Form

Select a report, output format, and any filter(s) you wish to limit the report by and Click Run to execute the report.

Report: **Store Average Distance Report** Format: HTML Run

Filters

Report Period
 From: 2003 Jan To: 2003 Jan

Store Filter Options

Map Stores: Selected Stores:

OR

Store: 10 (GS)
 Store: 139 (GS)
 Store: 144 (GS)
 Store: 15 (SM)
 Store: 165 (GS)
 Store: 2 (GS)
 Store: 209 (SM)

OR Store #

Other Business Type:

All
 Supermarket (SM)
Medium or Small Grocery (GS)
 Convenience Store (CS)
 Specialty Food (SF)
 Other Grocery Combination (CO)
 General Store (CM)

Hide Criteria ↑

Store Summary

Ranked by Highest Sales
Jan 2003

Store Name	Business Type	Total Store Sales	# Customers	Average Single Purchase	Fraud Hash Factor
Store: 209	Supermarket	\$50,196.72	1,144	\$20.06	472
Store: 15	Supermarket	\$44,765.72	1,071	\$21.28	381
Store: 24	Medium or Small Grocery	\$22,039.37	616	\$17.99	477
Store: 144	Medium or Small Grocery	\$9,168.98	279	\$13.93	240
Store: 264	Convenience Store	\$2,219.89	159	\$6.03	284
Store: 289	Medium or Small Grocery	\$1,447.47	98	\$4.05	20

Show Criteria ↓

Store Average Distance

By Highest Average Distance

Jan 2003

Store	Business Type	Average Distance (mi.)	# of Transactions	Average Sale	Total Sales
Store: 10	Medium or Small Grocery	2.18	59	\$2.57	\$151.58
Store: 165	Medium or Small Grocery	2.08	237	\$4.94	\$1,170.57
Store: 24	Medium or Small Grocery	2.01	1225	\$17.99	\$22,039.37
Store: 292	Medium or Small Grocery	2.00	265	\$4.25	\$1,125.89
Store: 73	Medium or Small Grocery	1.88	105	\$4.16	\$436.73
Store: 342	Medium or Small Grocery	1.75	85	\$3.41	\$289.65
Store: 144	Medium or Small Grocery	1.71	658	\$13.93	\$9,168.98
Store: 289	Medium or Small Grocery	1.47	357	\$4.05	\$1,447.47
Store: 2	Medium or Small Grocery	1.40	165	\$2.88	\$475.60
Store: 139	Medium or Small Grocery	.93	76	\$2.61	\$198.50
TOTAL			3232	\$11.29	\$36,504.34

Show Criteria ↓

Store Average Distance

By Highest Average Distance
Jan 2003

Store	Business Type	Average Distance (mi.)	# of Transactions	Average Sale	Total Sales
Store: 10	Medium or Small Grocery	2.18	59	\$2.57	\$151.58
Store: 165	Medium or Small Grocery	2.08	237	\$4.94	\$1,170.57
Store: 24	Medium or Small Grocery	2.01	1225	\$17.99	\$22,039.37
Map this store Customer Summary this store - HTML Customer Summary this store - PDF Customer Summary this store - Excel					
Store: 342	Medium or Small Grocery	1.73	63	\$3.41	\$215.65
Store: 144	Medium or Small Grocery	1.71	658	\$13.93	\$9,168.98
Store: 289	Medium or Small Grocery	1.47	357	\$4.05	\$1,447.47
Store: 2	Medium or Small Grocery	1.40	165	\$2.88	\$475.60
Store: 139	Medium or Small Grocery	.93	76	\$2.61	\$198.50
TOTAL			3232	\$11.29	\$36,504.34

Information Builders. WebFOCUS GIS Adapter - Business Intelligence and Map I

Map Legend - Microsoft... (close)

Legend

LabelLines

Stores

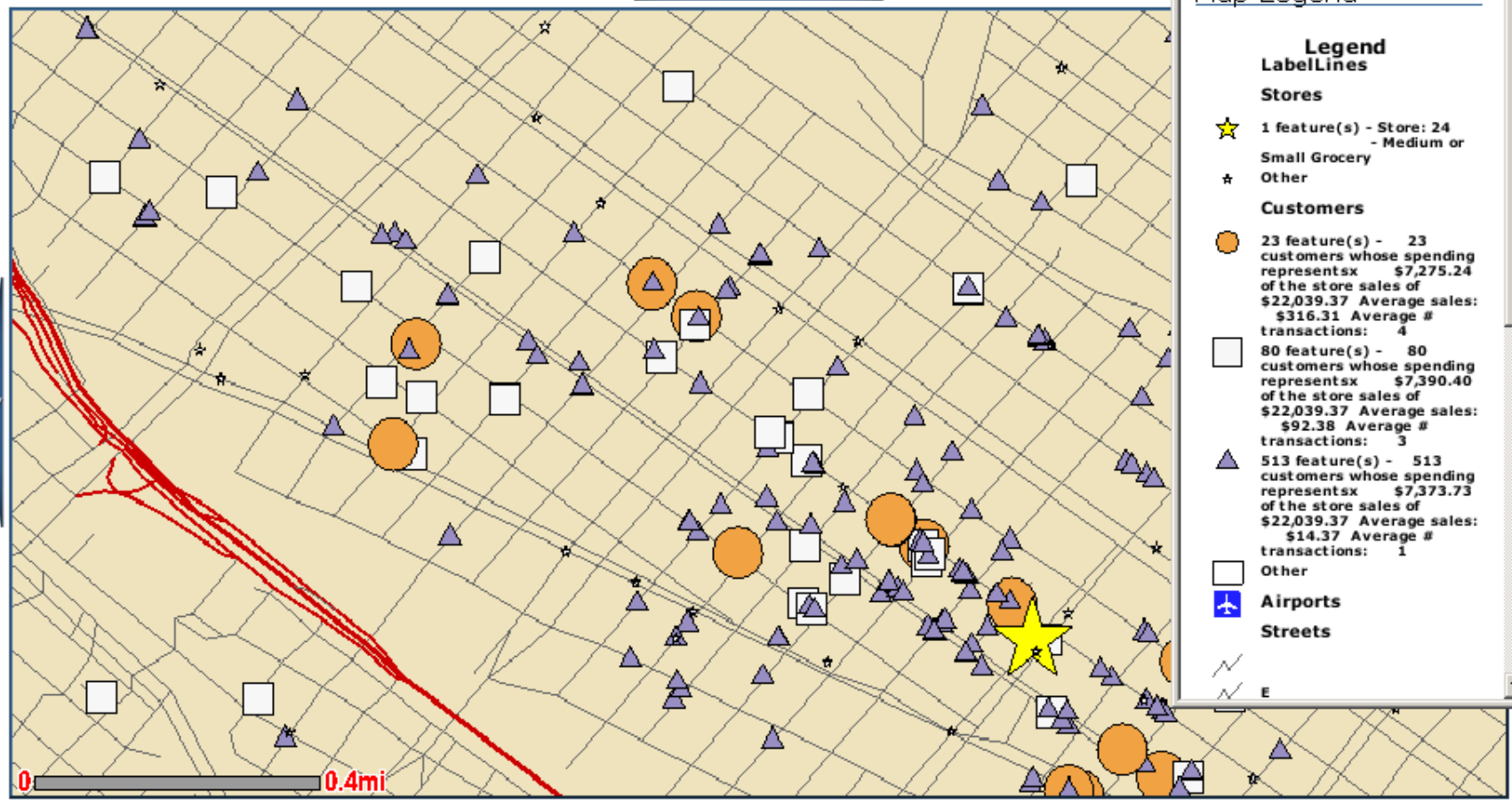
- ★ 1 feature(s) - Store: 24 - Medium or Small Grocery
- ★ Other

Customers

- 23 feature(s) - 23 customers whose spending representx \$7,275.24 of the store sales of \$22,039.37 Average sales: \$316.31 Average # transactions: 4
- 80 feature(s) - 80 customers whose spending representx \$7,390.40 of the store sales of \$22,039.37 Average sales: \$92.38 Average # transactions: 3
- ▲ 513 feature(s) - 513 customers whose spending representx \$7,373.73 of the store sales of \$22,039.37 Average sales: \$14.37 Average # transactions: 1
- Other

Airports

Streets



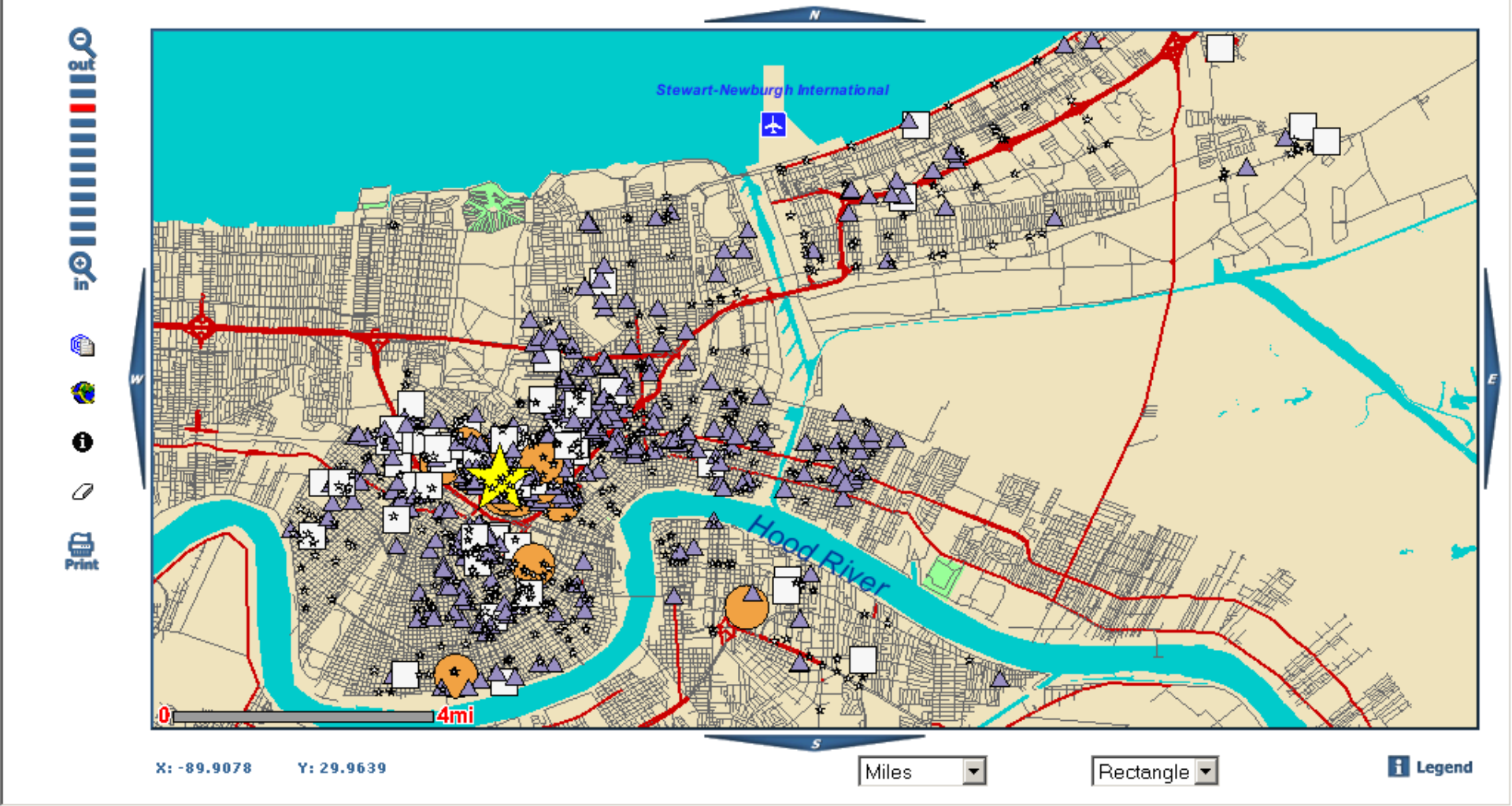
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Miles

Rectangle

Legend

Information Builders. WebFOCUS GIS Adapter - Business Intelligence and Map Interaction 



Show Criteria ↓

Fraud Hash Grouping

Ranked by Highest % Concentration
Jan 2003

Store Name	Business Type	% Sales this Hash Grouping	Total \$ Volume	This Hash Grouping Volume	# of Trans This Grouping	Total Trans	% of Trans This Grouping
Store: 264	Convenience Store	33.4%	\$2,220	\$742	47	368	12.8%
Store: 24	Medium or Small Grocery	31.9%	\$22,039	\$7,023	138	1225	11.3%
Store: 292	Medium or Small Grocery	7.7%	\$1,126	\$87	34	265	12.8%
Store: 42	Medium or Small Grocery	6.4%	\$78	\$5	5	16	31.3%
Store: 144	Medium or Small Grocery	5.8%	\$9,169	\$533	63	658	9.6%
Store: 212	Medium or Small Grocery	3.3%	\$307	\$10	10	106	9.4%
Store: 322	Medium or Small Grocery	2.5%	\$1,805	\$46	67	512	13.1%
Store: 262	Medium or Small Grocery	2.2%	\$925	\$20	29	227	12.8%
Store: 139	Medium or Small Grocery	1.0%	\$199	\$2	14	76	18.4%
Store: 17	Convenience Store	.4%	\$694	\$3	6	197	3.0%
Store: 133	Medium or Small Grocery	.4%	\$1,360	\$5	37	280	13.2%
TOTAL			\$39,921	\$8,476	450	3930	

Show Criteria ↓

Fraud Indicator Analytics

Ranked by Highest % Concentration
Jan 2003

Store Name	Business Type	% Sales this Fraud Indicator	Total \$ Volume	This Fraud Indicator Volume	# of Trans This Fraud Indicator	Total Trans	% of Trans This Fraud Indicator
Store: 165	Medium or Small Grocery	36.5%	\$1,171	\$427	25	237	10.5%
Store: 264	Convenience Store	33.4%	\$2,220	\$742	47	368	12.8%
Store: 24	Medium or Small Grocery	31.9%	\$22,039	\$7,023	138	1225	11.3%
Map this store Customer Summary this store - HTML Customer Summary this store - PDF Customer Summary this store - PDF with Map Customer Summary this store - Excel							13.2%
							12.8%
							19.5%
Store: 73	Medium or Small Grocery	6.0%	\$437	\$26	22	105	21.0%
Store: 144	Medium or Small Grocery	5.8%	\$9,169	\$533	63	658	9.6%
Store: 209	Supermarket	4.9%	\$50,197	\$2,449	227	2502	9.1%
Store: 10	Medium or Small Grocery	4.0%	\$152	\$6	10	59	16.9%
Store: 342	Medium or Small Grocery	3.8%	\$290	\$11	10	85	11.8%
Store: 15	Supermarket	3.4%	\$44,766	\$1,512	242	2104	11.5%
Store: 78	Specialty Food	2.3%	\$781	\$18	16	161	9.9%
Store: 277	Other Grocery Combination	2.2%	\$651	\$14	10	163	6.1%
Store: 289	Medium or Small Grocery	1.7%	\$1,447	\$24	27	357	7.6%
Store: 2	Medium or Small Grocery	1.5%	\$476	\$7	23	165	13.9%
Store: 139	Medium or Small Grocery	1.0%	\$199	\$2	14	76	18.4%

File Edit View Insert Format Tools Data Go To Favorites Help

Back Forward Stop Refresh Home Search Favorites Media Print Copy Paste Mail Address

Address http://ibigis.ibi.com/ibi_apps/WFServlet?PG_REQTYPE=REDIRECT&PG_Func=GETBINARY&PG_File=djxvwryl.xht

Google Search Web Search Site 257 blocked AutoFill Options Links

A1 Store Activity Summary

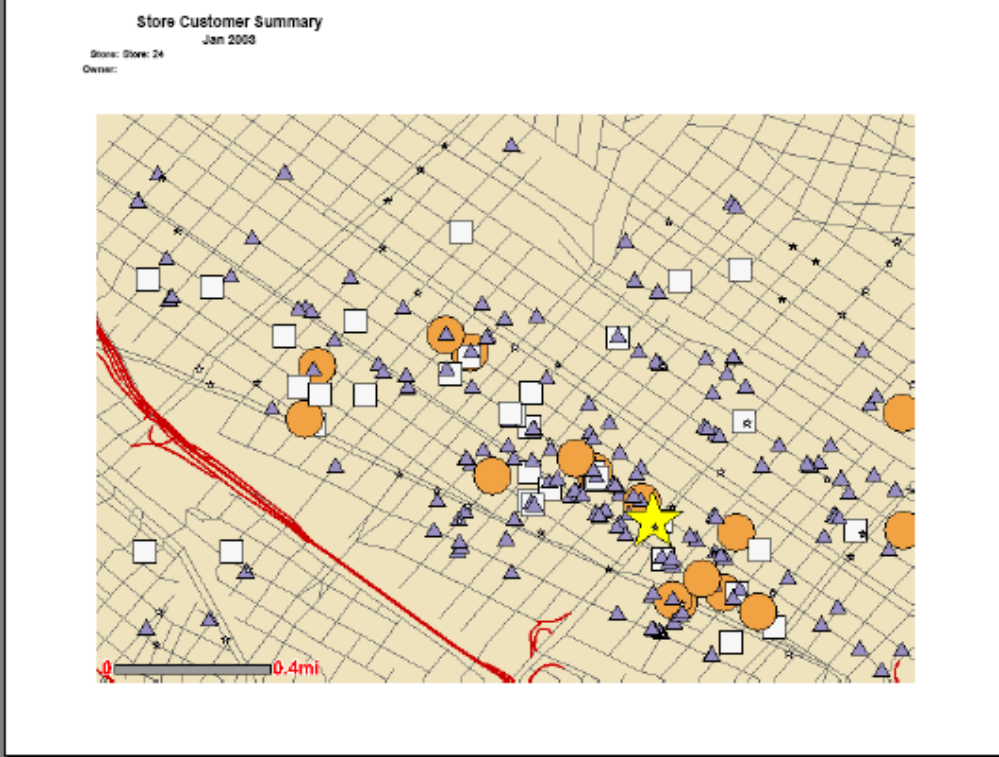
Store Activity Summary								H	I	J	K	L	M
Store Name	Store Number	Customer	Amount Spent	% of Store Sales	# of Trans	% of Store Trans							
Store: 24	4795598	000653696	492.41	2.23%	4	0.3265%							
Store: 24	4795598	000122159	487.90	2.21%	3	0.2449%							
Store: 24	4795598	000127173	477.00	2.16%	1	0.0816%							
Store: 24	4795598	000118291	468.00	2.12%	3	0.2449%							
Store: 24	4795598	000123132	459.85	2.09%	4	0.3265%							
Store: 24	4795598	000657505	408.51	1.85%	5	0.4082%							
Store: 24	4795598	000119785	340.39	1.54%	9	0.7347%							
Store: 24	4795598	000077743	312.64	1.42%	8	0.6531%							
Store: 24	4795598	000077640	311.24	1.41%	4	0.3265%							
Store: 24	4795598	000125485	296.74	1.35%	2	0.1633%							
Store: 24	4795598	000076029	292.24	1.33%	2	0.1633%							
Store: 24	4795598	000081423	291.25	1.32%	9	0.7347%							
Store: 24	4795598	000751173	289.80	1.31%	5	0.4082%							
Store: 24	4795598	000128983	285.00	1.29%	1	0.0816%							
Store: 24	4795598	000122184	284.79	1.29%	2	0.1633%							
Store: 24	4795598	000681262	272.97	1.24%	2	0.1633%							
Store: 24	4795598	000079225	240.00	1.09%	1	0.0816%							
Store: 24	4795598	000080110	240.00	1.09%	1	0.0816%							
Store: 24	4795598	000080533	230.63	1.05%	8	0.6531%							
Store: 24	4795598	000119432	207.99	0.94%	21	1.7143%							
Store: 24	4795598	000756734	202.82	0.92%	3	0.2449%							
Store: 24	4795598	000123988	195.07	0.89%	4	0.3265%							
Store: 24	4795598	000077412	188.00	0.85%	1	0.0816%							
Store: 24	4795598	000766462	188.00	0.85%	1	0.0816%							
Store: 24	4795598	000121307	176.67	0.80%	16	1.3061%							
Store: 24	4795598	000118994	158.26	0.72%	12	0.9796%							
Store: 24	4795598	000058215	157.49	0.71%	3	0.2449%							
Store: 24	4795598	000116534	157.39	0.71%	1	0.0816%							
Store: 24	4795598	000076502	155.07	0.70%	5	0.4082%							
Store: 24	4795598	000120694	147.49	0.67%	3	0.2449%							
Store: 24	4795598	000078771	145.41	0.66%	2	0.1633%							

Bookmarks

Signatures

Layers

Pages



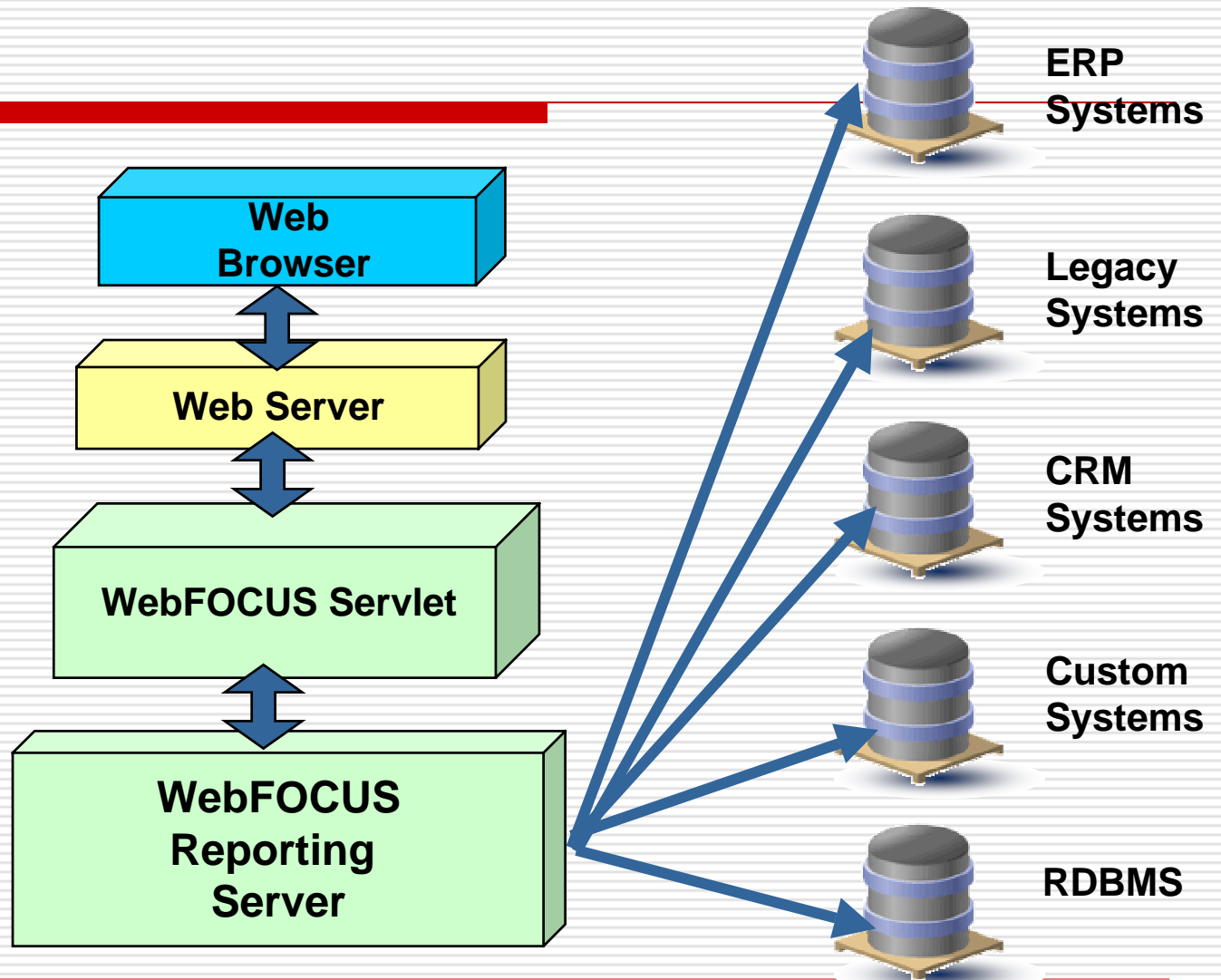
Store Customer Summary

Jan 2008

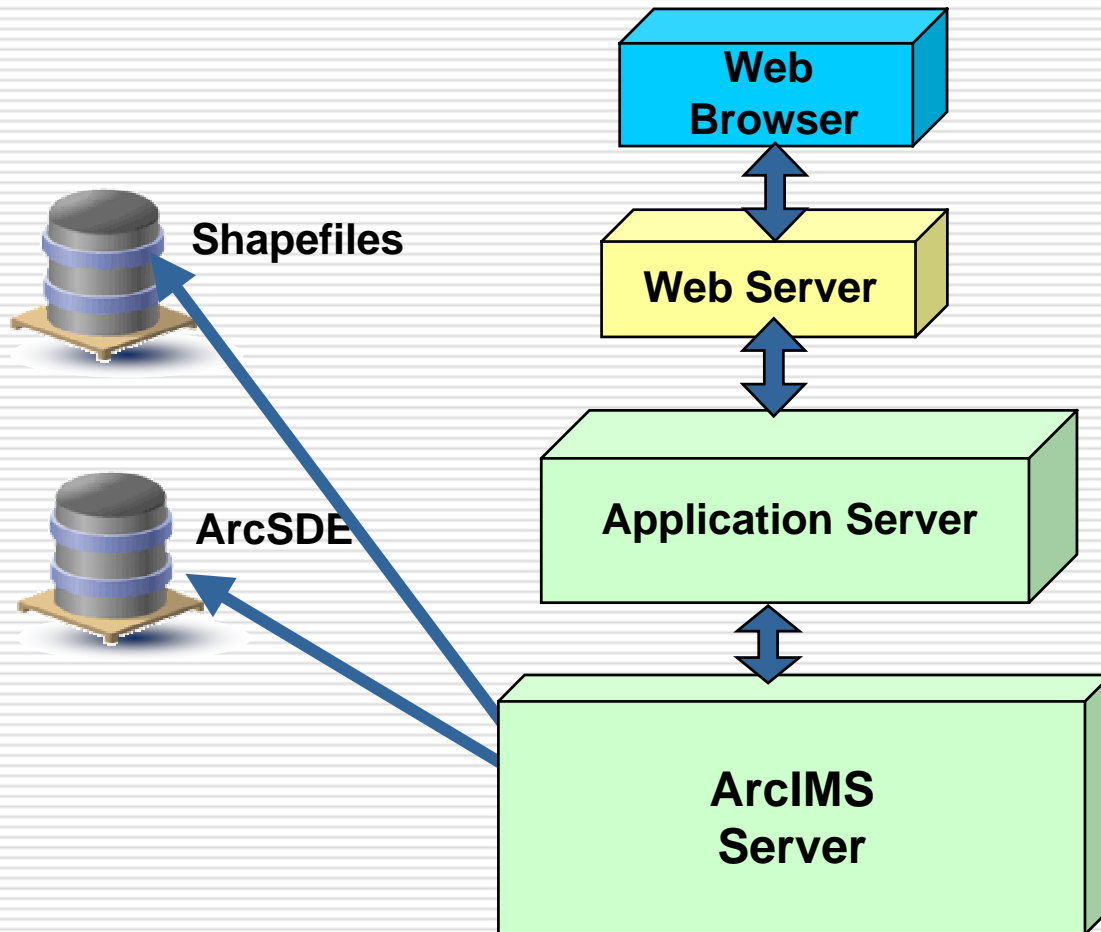
Store: Store: 24
Owner:

Customer	Amount Spent	% of Store Sales	# of Trans	% of Store Trans
00005666	\$492.41	2.23%	4	0.3265%
000122159	\$487.00	2.21%	5	0.3449%
000127173	\$477.00	2.18%	1	0.0016%
000116291	\$458.00	2.12%	5	0.3449%

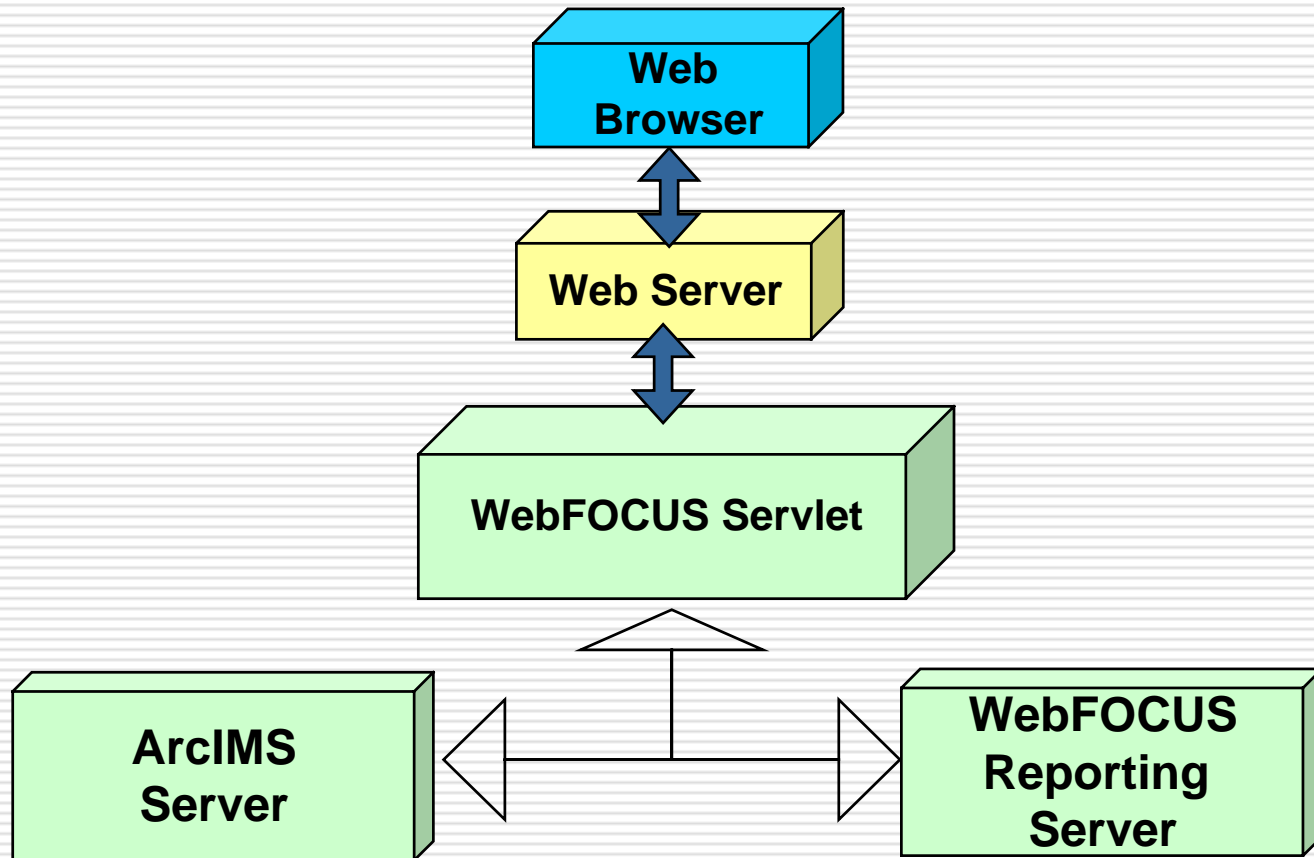
How does WebFOCUS work?



How does ArcIMS work?



How do they work together?



Questions

Please ask questions NOW

OR

drop by Information Builders' display in the
exhibition hall

Thank you very much and enjoy the
conference!