

USING CRASH DATA IN THE PURSUIT OF A SAFER NORTH CENTRAL TEXAS REGION



2012 TEXITE FALL MEETING
AUGUST 30, 2012

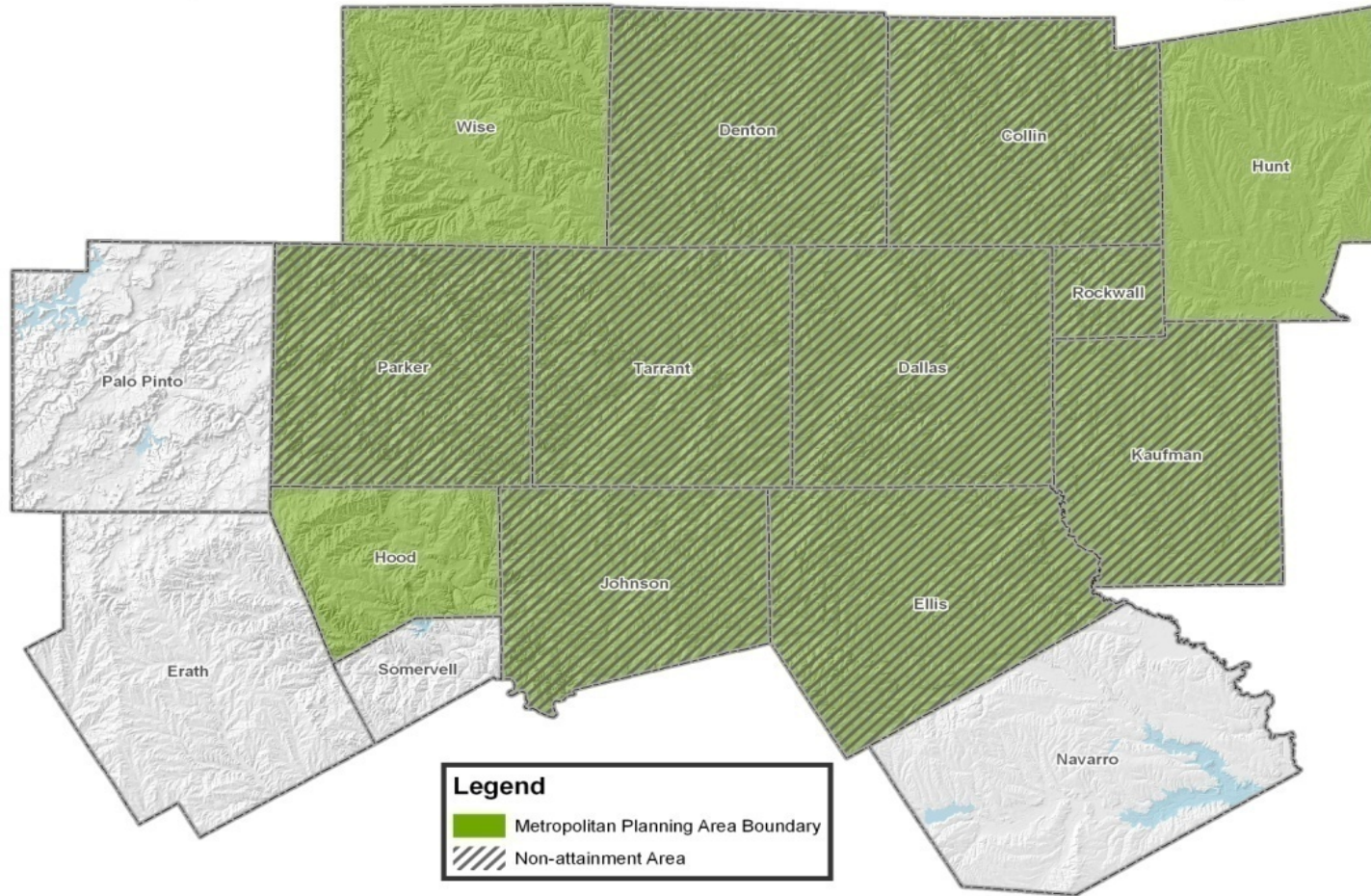
JORY DILLE, NORTH CENTRAL TEXAS COUNCIL OF
GOVERNMENTS (NCTCOG)

OVERVIEW

- WHAT IS NCTCOG
- TYPES OF CRASH DATA USED
 - TXDOT CRASH RECORD INFORMATION SYSTEM (CRIS)
 - NHTSA FATALITY ANALYSIS REPORTING SYSTEM (FARS)
 - NATIONAL RESPONSE CENTER
- PROJECT EXAMPLES

WHAT IS NCTCOG?

Metropolitan Planning Area Within the NCTCOG Region



TYPES OF CRASH DATA USED

- TxDOT Crash Record Information System (CRIS)
- NHTSA Fatality Analysis Reporting System (FARS)
- National Response Center



TXDOT'S CRASH RECORDS INFORMATION SYSTEM (CRIS)

- 2003 – 2012 Data Dumps
 - CSV format
 - Receive entire State of Texas

Early Data Files	2006-2009 Files	2010-2011 Files
-Crash -Vehicle -Person -Citation	-Crash -Vehicle -Person -Charges -Damages	-Crash -Vehicle -Person -Charges -Damages -Endorsement -Restrictions

CRIS DATA FILES

- Crash File = 129 Data Fields
- Vehicle File = 61 Data Fields
- Person File = 38 Data Fields

ID	Crash Number	Crash Update Flag	Crash Date	Crash Time
County	City	Population Group	Road Part	Entering Roads
Road Class	Intersection Type	Intersection Related	Road Alignment	Road Construction Zone Flag
Road Construction Zone Workers Present Flag	CMV Flag	School Bus Flag	Railroad Related Flag	Hit and Run Flag
TxDOT Reportable Flag	Weather Condition	Surface Condition	Crash Severity	Traffic Control
Road Condition	Roadway Related	Light Condition	Latitude	Longitude
Primary Road Highway System	Primary Road Highway Number	Primary Road Highway Suffix	Primary Road Distance From Origin	Primary Road Street Name
Primary Road Street Number	Primary Road Reference Mark Number	Primary Road Reference Mark Displacement	Primary Road Control	Primary Road Section
Primary Road Milepoint	Primary Road MPEQ Applied Date	Secondary Road Street Name	Secondary Road Street Number	Secondary Road Control
Secondary Road Section	Secondary Road Milepoint	First Harmful Event	Object Struck	Manner of Collision
Other Factor	Number of Vehicles	Number of Persons	Number of Drivers	Number of Passengers
Number of Unrestrained Occupants	Number of Passengers with Airbag Deployed	Number of Occupants Ejected	Number of Motorcycle Passengers	Number of Pedestrians
Number of Pedacyclists	Number of Other Non-Occupants	Number of DWI Alcohol	Number of DWI Drug	Number of Licensed Drivers

CRASH FILE SAMPLE – RAW DATA

	A	B	C	D	E	F	G	H	I
1	ID	Crash_Nbr	Crash_Update_Fl	Crash_Date	Crash_Time	Cnty_ID	City_ID	Pop_Group_ID	Road_Part_ID
2	1	2001000000	Y	1/1/2001	01:00 AM	36	1601	1	
3	2	2001000001	Y	1/1/2001	06:00 PM	57	107	9	
4	3	2001000001	N	3/12/2001	09:05 AM	161	442	8	1
5	4	2001000002	Y	1/1/2001	00:00 AM	66	1631	0	1
6	5	2001000003	Y	1/1/2001	09:00 AM	109	1674	0	1
7	6	2001000004	Y	1/1/2001	09:00 AM	109	1674	0	1
8	7	2001000005	Y	1/1/2001	06:00 AM	1	1566	0	1
9	8	2001000006	Y	1/1/2001	04:00 PM	2	1567	0	1
10	9	2001000007	Y	1/1/2001	01:00 AM	3	1568	0	1
11	10	2001000008	Y	1/1/2001	01:00 AM	3	1568	0	1
12	11	2001000009	Y	1/1/2001	06:00 PM	3	117	4	1
13	12	2001000010	Y	1/1/2001	03:00 AM	3	272	6	1
14	13	2001000011	Y	1/1/2001	09:00 AM	3	272	6	1
15	14	2001000012	Y	1/1/2001	06:00 AM	3	272	6	1
16	15	2001000013	Y	1/1/2001	11:00 PM	3	272	6	3
17	16	2001000014	Y	1/1/2001	05:00 AM	3	272	6	1
18	17	2001000015	Y	1/1/2001	06:00 AM	3	272	6	1
19	18	2001000016	Y	1/1/2001	08:00 AM	3	272	6	
20	19	2001000017	Y	1/1/2001	07:00 PM	4	368	4	1
21	20	2001000018	Y	1/1/2001	10:00 PM	6	1571	0	1
22	21	2001000019	Y	1/1/2001	06:00 PM	7	225	3	1
23	22	2001000020	Y	1/1/2001	11:00 PM	8	1573	0	1
24	23	2001000021	N	3/21/2001	05:30 PM	15	379	9	1
25	24	2001000021	Y	1/1/2001	07:00 PM	8	1573	0	1
26	25	2001000022	Y	1/1/2001	03:00 PM	14	1579	0	1
27	26	2001000022	N	4/5/2001	06:19 PM	29	341	5	1
28	27	2001000023	N	4/1/2001	07:30 AM	101	208	9	7
29	28	2001000023	Y	1/1/2001	08:00 PM	14	36	5	1
30	29	2001000024	N	4/11/2001	04:21 PM	31	53	8	1
31	30	2001000024	Y	1/1/2001	02:00 AM	14	236	7	
32	31	2001000025	Y	1/1/2001	03:00 AM	14	236	7	
33	32	2001000025	N	5/1/2001	02:30 PM	15	379	9	7

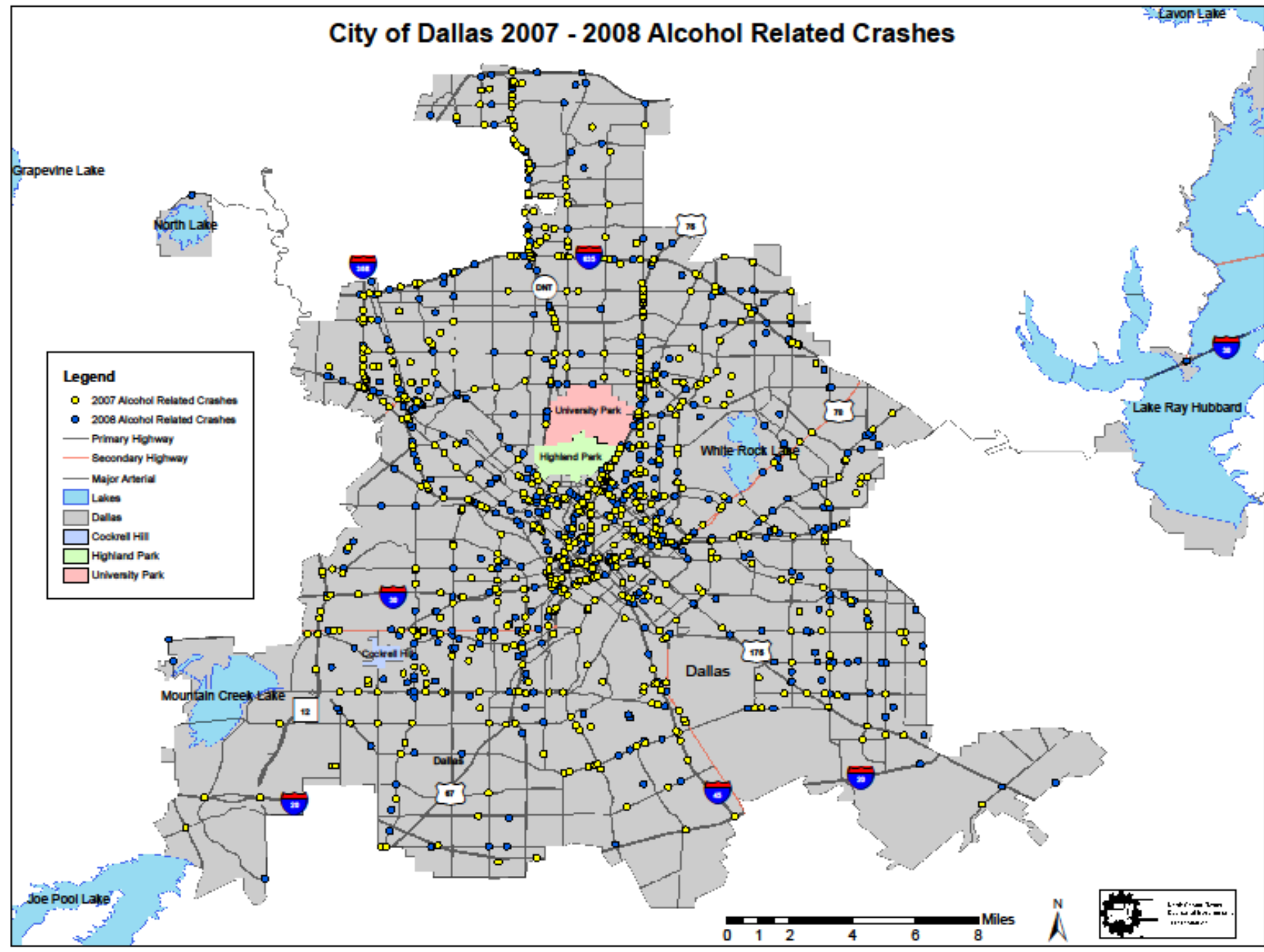
CRASH FILE SAMPLE - DECODED

ID	Crash Month-Year	Crash Time	County	City	Latitude	Longitude	Primary Highway	Crash Severity
12296752	September-11	7:05:00 PM	COLLIN	PLANO	33.0288906	-96.70895152	US	NOT INJURED
12275297	July-11	2:14:00 PM	COLLIN	PLANO	33.04106296	-96.73591369		NOT INJURED
11974166	March-11	9:16:00 AM	COLLIN	PLANO	33.03137875	-96.79481048	SH	NOT INJURED
12012024	April-11	12:53:00 PM	COLLIN	PLANO	33.05638031	-96.71148626		NOT INJURED
11836096	January-11	6:38:00 PM	DALLAS	DALLAS			IH	NOT INJURED
12448377	December-11	9:45:00 AM	DALLAS	DALLAS	32.79869207	-96.6825387	SL	NOT INJURED
12442123	December-11	8:15:00 AM	DALLAS	GARLAND	32.86821747	-96.66783905	IH	POSSIBLE INJURY
12406811	November-11	1:30:00 PM	DALLAS	DALLAS	32.79543569	-96.68352105	SL	NOT INJURED
12382168	November-11	4:33:00 AM	DALLAS	GRAND PRARIE			IH	POSSIBLE INJURY
11893425	January-11	10:35:00 PM	DALLAS	DALLAS	32.79098824	-96.75613827	IH	NOT INJURED
12360245	October-11	8:30:00 AM	DALLAS	DALLAS	32.65427051	-96.75065116		NOT INJURED
11900129	February-11	12:40:00 PM	DALLAS	DALLAS	32.79817386	-96.68238627	IH	NOT INJURED
12334870	October-11	10:35:00 AM	DALLAS	DALLAS	32.76444442	-96.77580099	IH	NOT INJURED
12330356	October-11	8:39:00 AM	DALLAS	COPPELL	32.98723041	-96.99342627		NOT INJURED
12314187	October-11	5:48:00 PM	DALLAS	GARLAND	32.85558919	-96.64796327	IH	NOT INJURED
12298548	August-11	8:05:00 AM	DALLAS	DALLAS	32.77318416	-96.68270503	SL	NOT INJURED
12295550	October-11	6:05:00 PM	DALLAS	DALLAS	32.74981548	-96.91862588	SL	NOT INJURED
12278121	September-11	9:55:00 PM	DALLAS	DALLAS	32.92554335	-96.83702879	IH	POSSIBLE INJURY
12275508	July-11	3:55:00 AM	DALLAS	DALLAS	32.70819887	-96.83010582	US	NOT INJURED
12242711	August-11	10:38:00 PM	DALLAS	GARLAND	32.90857835	-96.69325082		NOT INJURED
12225247	August-11	7:15:00 PM	DALLAS	SEAGONVILLE	32.656539	-96.560621		NOT INJURED

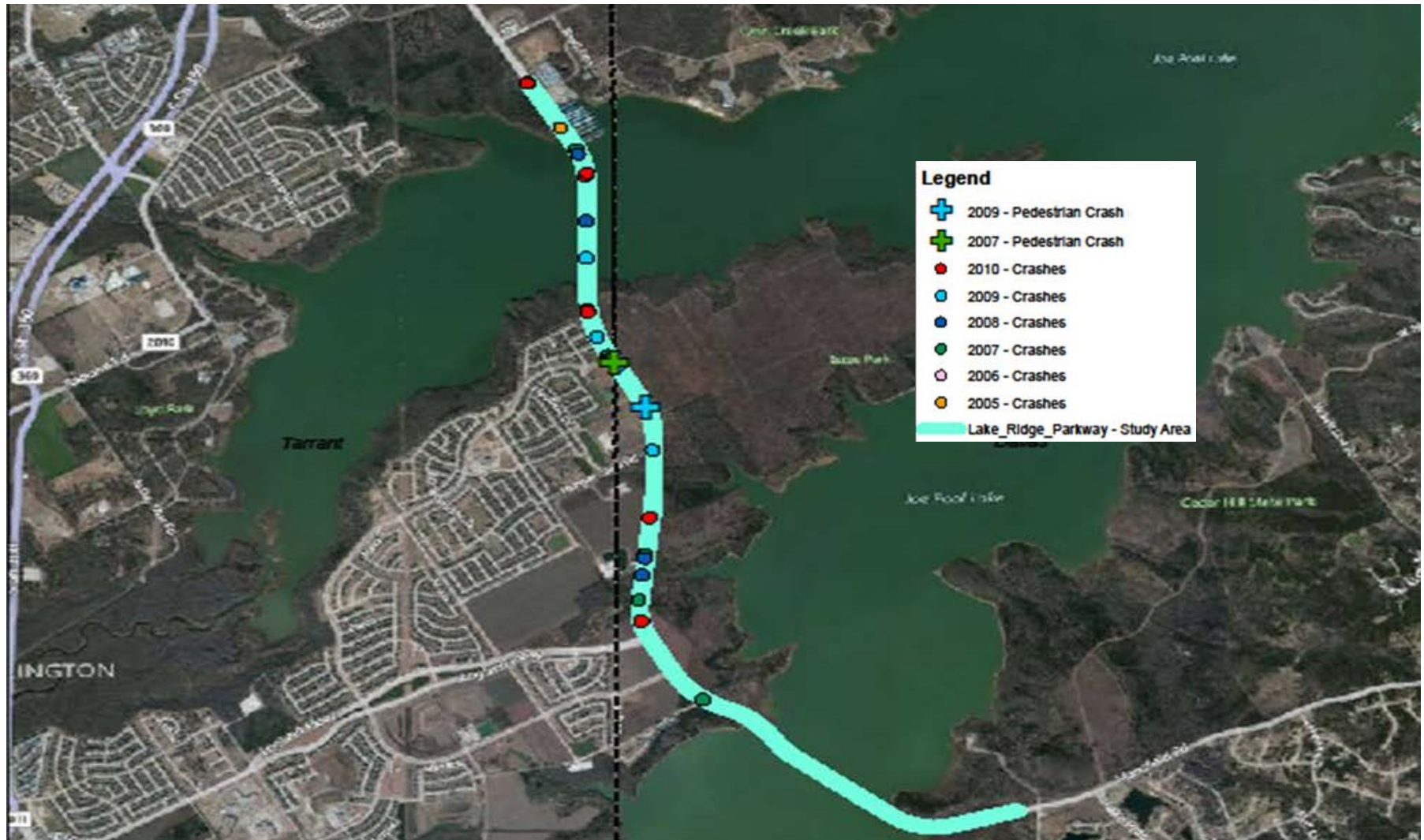
PROJECT EXAMPLES

- City of Dallas – 2010
 - Alcohol Related Crashes
- Lake Ridge Parkway – February 2012
 - Bicycle and Pedestrian Data
- City of Fort Worth–April 2012
 - Bicycle and Pedestrian Data
- Truck Data Request – May 2012
 - Regional Commercial Truck Analysis

City of Dallas 2007 - 2008 Alcohol Related Crashes



LAKE RIDGE PARKWAY (2005-2010)



LAKE RIDGE PARKWAY (2005-2010)

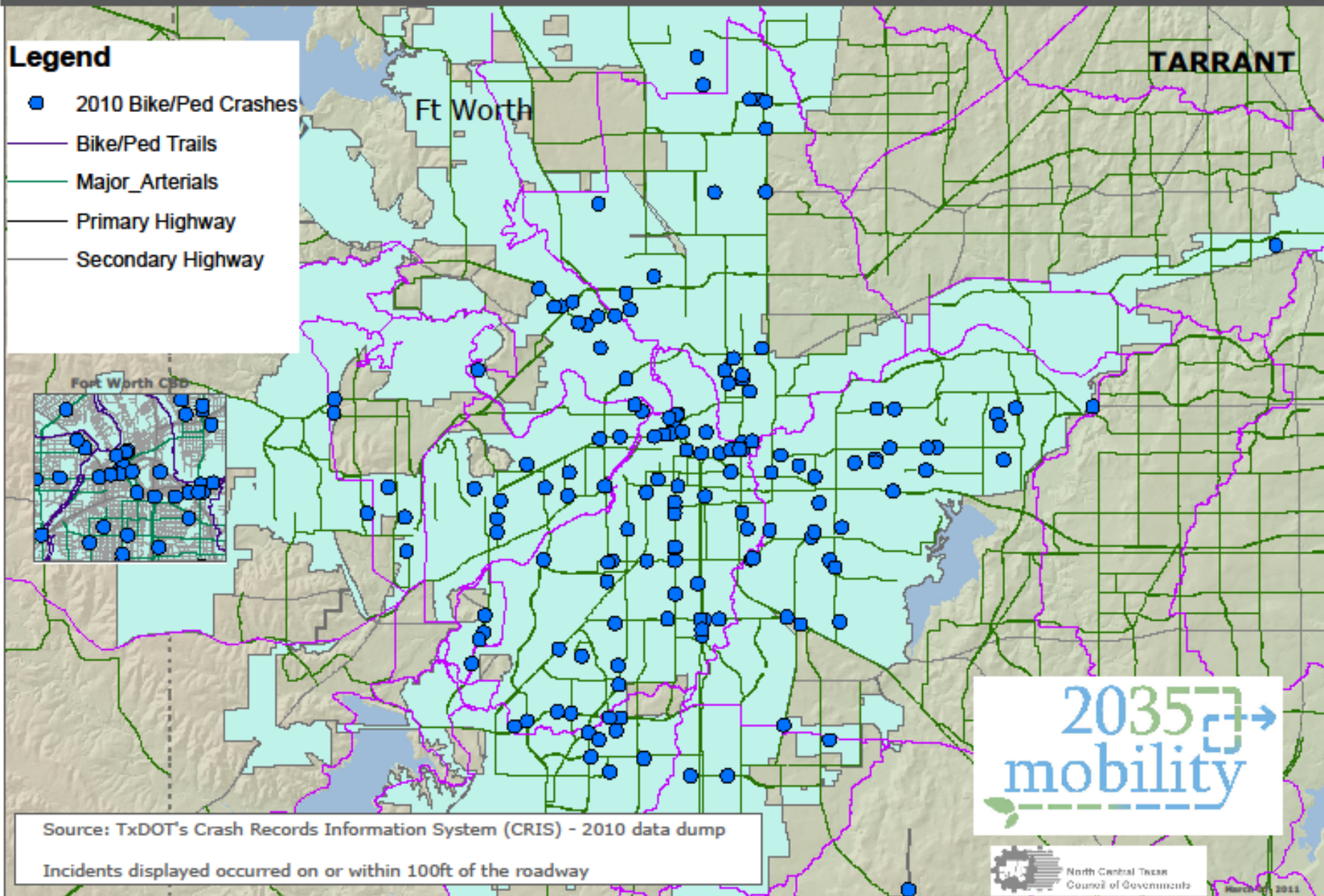
Lake Ridge Parkway Bridge Bicycle and Pedestrian Crashes 2005 - 2010				
Year	Pedestrian Crashes	Bicycle Crashes	Total Bicycle and Pedestrian Crashes	Total - All Crashes
2005	0	0	0	3
2006	0	0	0	8
2007	1	0	1	9
2008	0	0	0	5
2009	1	0	1	5
2010	0	0	0	9

2010 Bicycle & Pedestrian (Involved) Crash Data

City of Ft Worth

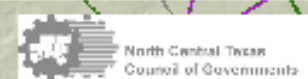
Legend

- 2010 Bike/Ped Crashes
- Bike/Ped Trails
- Major_Arterials
- Primary Highway
- Secondary Highway



Source: TxDOT's Crash Records Information System (CRIS) - 2010 data dump

Incidents displayed occurred on or within 100ft of the roadway



March 2011

FORT WORTH REQUEST

	City of Fort Worth 2005-2010 Safety Data						
	Total # of All Crashes						
	2010	2009	2008	2007	2006	2005	Total
Unknown	492	522	877	855	785	1,017	4,548
Incapacitating Injury	417	381	456	498	414	335	2,501
Non-Incapacitating Injury	1,341	1,577	1,371	1,715	1,524	1,623	9,151
Possible Injury	2,280	3,039	3,013	3,707	3,736	4,129	19,904
Fatality	61	59	57	77	74	62	390
Not Injured	5,048	7,763	6,805	6,633	5,958	6,733	38,940
Total	9,639	13,341	12,579	13,485	12,491	13,899	75,434
	Total # of Pedestrians Involved						
	2010	2009	2008	2007	2006	2005	Total
Unknown	0	6	1	3	2	2	14
Incapacitating Injury	39	7	33	31	29	39	178
Non-Incapacitating Injury	55	19	61	51	49	58	293
Possible Injury	42	51	56	42	34	57	282
Fatality	12	3	18	27	15	22	97
Not Injured	1	97	5	3	3	2	111
Total	149	183	174	157	132	180	975
	Total # of Bicycles Involved						
	2010	2009	2008	2007	2006	2005	Total
Unknown	0	2	0	0	0	0	2
Incapacitating Injury	3	3	4	3	2	3	18
Non-Incapacitating Injury	15	10	28	19	14	23	109
Possible Injury	11	8	25	14	11	15	84
Fatality	0	0	1	0	0	0	1
Not Injured	1	35	0	1	2	1	40
Total	30	58	58	37	29	42	254

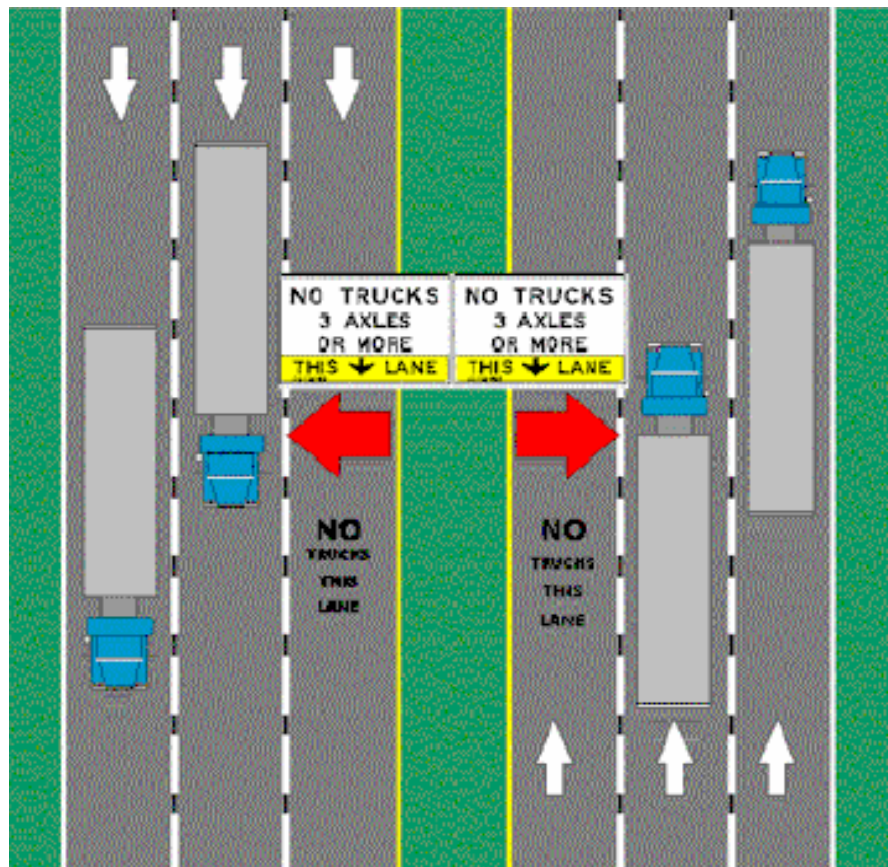
FORT WORTH REQUEST

Crash Month Year	Crash Time	County	Latitude	Longitude	Primary Highway	Primary Road	Crash Severity
November-10	8:10:00 PM	DENTON	33.02659244	-97.28370047	SH114	3596 SH0114	NOT INJURED
January-10	3:30:00 PM	DENTON			SH114	SH0114	NOT INJURED
March-10	6:00:00 AM	DENTON	33.024778	-97.298982		2700 MAPLE CREEK DR	UNKNOWN
August-10	10:20:00 PM	DENTON				HARRIET CREEEK DR	NOT INJURED
December-10	6:30:00 AM	DENTON	33.00322735	-97.29105249	IH35 W	IH0035W	NOT INJURED
December-10	6:30:00 AM	DENTON	33.00322735	-97.29105249	IH35 W	IH0035W	NOT INJURED
November-10	7:10:00 AM	DENTON	33.02669504	-97.29355828	SH114	3014 SH0114	NOT INJURED
August-10	6:37:00 PM	DENTON	33.02675934	-97.30042906	SH114	2544 SH0114	POSSIBLE INJURY
July-10	7:45:00 PM	DENTON	33.00685265	-97.31068835		2300 EAGLE PKWY	NOT INJURED
October-10	11:20:00 PM	DENTON	33.02115986	-97.28795169		15806 CHAMPIONSHIP PKWY	NON-INCAPACITATI
November-10	1:24:00 PM	DENTON	33.02664365	-97.28806676	SH114	3388 SH0114	NON-INCAPACITATI
November-10	2:35:00 PM	DENTON			SH114	SH0114	NOT INJURED
November-10	7:35:00 AM	DENTON	33.02679855	-97.27857844	SH114	3856 SH0114	NON-INCAPACITATI
September-10	5:50:00 PM	DENTON			SH114	SH0114	NOT INJURED

TRUCK DATA REQUEST

Restricted Trucks From Inside Lane

Requires Facilities With at Least Three Lanes in Each Direction



TRUCK DATA REQUEST

REGIONAL COMMERCIAL TRUCK DATA (16 Counties)							
	2011	2010	2009	2008	2007	2006	Total
Total # All Crashes	85,649	86,645	96,718	96,089	100,479	94,743	560,323
5.32% of All Regional Crashes Involve Commercial Trucks							
	2011	2010	2009	2008	2007	2006	Total
Total # Truck Crashes	6,559	4,192	4,172	4,947	5,246	4,694	29,810
	2011	2010	2009	2008	2007	2006	Total
Total # Trucks Involved "per Crash"	7,013	4,192	4,384	5,208	5,687	5,095	31,579
	2011	2010	2009	2008	2007	2006	Total
Total # Truck Crashes/per Crash Severity							
Unknown	103	88	48	61	80	80	460
Incapacitating Injury	178	130	136	164	184	180	972
Non-Incapacitating	731	452	413	522	576	501	3,195
Possible	1,166	730	725	803	970	949	5,343
Fatality	64	35	50	74	76	67	366
Not Injured	4,317	2,757	2,800	3,323	3,360	2,917	19,474
Total	6,559	4,192	4,172	4,947	5,246	4,694	29,810

TRUCK DATA REQUEST

Total # Truck Crashes/per County	2011	2010	2009	2008	2007	2006	Total
Collin	455	269	261	277	353	338	1,953
Dallas	2,556	1,602	1,558	1,567	1,728	1,683	10,694
Denton	492	363	269	372	357	391	2,244
Ellis	146	100	110	166	168	153	843
Erath	36	25	30	37	52	30	210
Hood	39	21	39	97	92	45	333
Hunt	127	80	85	70	95	70	527
Johnson	189	125	184	341	289	220	1,348
Kaufman	114	81	70	97	109	93	564
Navarro	115	59	81	106	92	98	551
Palo Pinto	34	22	24	42	34	32	188
Parker	151	72	116	158	166	136	799
Rockwall	102	65	53	81	79	60	440
Somervell	18	12	8	24	22	24	108
Tarrant	1,873	1,182	1,191	1,344	1,474	1,185	8,249
Wise	112	114	93	168	136	136	759
Total	6,559	4,192	4,172	4,947	5,246	4,694	29,810

FATALITY ANALYSIS REPORTING SYSTEM (FARS)

- 1994 – 2010 Data Available



NHTSA
NATIONAL HIGHWAY TRAFFIC
SAFETY ADMINISTRATION

NCSA DATA RESOURCE WEBSITE

FATALITY ANALYSIS REPORTING SYSTEM
(FARS) ENCYCLOPEDIA

Pubs/Data Requests

FARS Data Tables

Query FARS Data

State Traffic Safety Info

Help

NEW

Map features - [Click here](#) for information.

NEW

VMT changes - [Click here](#) for information.

Query - Step 3: Choose Variables to Use (2010)

Submit

Clear Form

FARS SAMPLE

Obs.	istatenum	icasenum	icity	icounty	saccdage	iaccday	iaccmon	sacctime	iaccyr
4029	48	2708	5390	85	12142009	14	12	1532	2009
4028	48	2708	5390	85	12142009	14	12	1532	2009
4027	48	2708	5390	85	12142009	14	12	1532	2009
4026	48	2708	5390	85	12142009	14	12	1532	2009
3938	48	2647	4230	85	12222009	22	12	1855	2009
3937	48	2647	4230	85	12222009	22	12	1855	2009
50	48	34	4230	85	1032009	3	1	2309	2009
3918	48	2636	1730	85	12182009	18	12	16	2009
3917	48	2635	5730	85	12172009	17	12	1739	2009
3916	48	2635	5730	85	12172009	17	12	1739	2009
3901	48	2625	4230	85	12012009	1	12	113	2009
3857	48	2594	2520	85	12242009	24	12	1630	2009
3856	48	2594	2520	85	12242009	24	12	1630	2009
3855	48	2594	2520	85	12242009	24	12	1630	2009
130	48	90	0	85	1032009	3	1	340	2009
3552	48	2398	5390	85	11202009	20	11	1322	2009
3551	48	2398	5390	85	11202009	20	11	1322	2009
3550	48	2397	0	85	11202009	20	11	920	2009
3549	48	2397	0	85	11202009	20	11	920	2009
3537	48	2386	5390	85	11162009	16	11	2022	2009
3449	48	2322	0	85	11062009	6	11	2233	2009
3394	48	2282	200	85	10172009	17	10	630	2009
3393	48	2282	200	85	10172009	17	10	630	2009
3273	48	2202	4230	85	9052009	5	9	2038	2009
3145	48	2116	5390	85	10092009	9	10	1028	2009
3144	48	2116	5390	85	10092009	9	10	1028	2009
3053	48	2053	5390	85	10102009	10	10	321	2009

NCTCOG 16-COUNTY CRASH AND FATALITY DATA 2008-2010

2008-2010 Fatalities				
County	2008	2009	2010	% Change 2009 to 2010
Collin	34	38	32	-15.79%
Dallas	231	155	167	7.74%
Denton	29	32	39	21.88%
Ellis	21	16	14	-12.50%
Erath	9	15	6	-60.00%
Hood	15	7	3	-57.14%
Hunt	19	15	15	0.00%
Johnson	27	24	23	-4.17%
Kaufman	17	17	18	5.88%
Navarro	14	5	6	20.00%
Palo Pinto	10	10	7	-30.00%
Parker	20	15	13	-13.33%
Rockwall	2	3	7	133.33%
Somervell	5	4	3	-25.00%
Tarrant	134	128	123	-3.91%
Wise	20	12	12	0.00%
Total	607	496	488	-1.61%

2008-2010 Crashes				
County	2008	2009	2010	% Change 2009 to 2010
Collin	9,876	10,007	8,736	-12.70%
Dallas	35,319	36,874	35,409	-3.97%
Denton	7,892	7,909	7,168	-9.37%
Ellis	2,153	2,086	1,917	-8.10%
Erath	615	596	553	-7.21%
Hood	931	696	654	-6.03%
Hunt	1,101	1,150	1,063	-7.57%
Johnson	3,029	2,369	2,093	-11.65%
Kaufman	1,562	1,480	1,395	-5.74%
Navarro	1,150	1,137	992	-12.75%
Palo Pinto	612	566	425	-24.91%
Parker	1,877	1,934	1,606	-16.96%
Rockwall	1,069	903	929	2.88%
Somervell	202	157	161	2.55%
Tarrant	27,651	27,950	22,652	-18.96
Wise	1,050	904	892	-1.33
Total	96,089	96,718	86,645	-10.41%

2010 CONTRIBUTING FACTORS ANALYSIS

	2010 Primary Contributing Factors (Serious and Fatality Crashes)	Percentage
1	Speeding (<i>Over limit/ Unsafe Speed/ Failed to Control Speed</i>)	12.60%
2	Driver Related (<i>Distraction in Vehicle / Driver Inattention / Road Rage / Driver Without Headlights</i>)	5.52%
3	Faulty Evasive Action	4.44%
4	Changed Lane When Unsafe	4.21%
5	Followed Too Closely	3.97%
6	Failed to Drive in Single Lane	2.64%
7	Disregard Traffic Control (<i>Stop and Go Signal / Stop Sign or Light</i>)	2.24%
8	Failed to Yield ROW (<i>Open Intersection / Private Drive / To Pedestrian / Stop Sign / Yield Sign / Turning Left</i>)	1.96%
9	Under Influence (<i>Had Been Drinking / Alcohol / Drug</i>)	1.28%
10	Disabled in Traffic Lane	0.87%

NATIONAL RESPONSE CENTER (NRC)

- 1982– 2011 Data Available
- HazMat Incident Data
- Download all data for our region
- Fields:

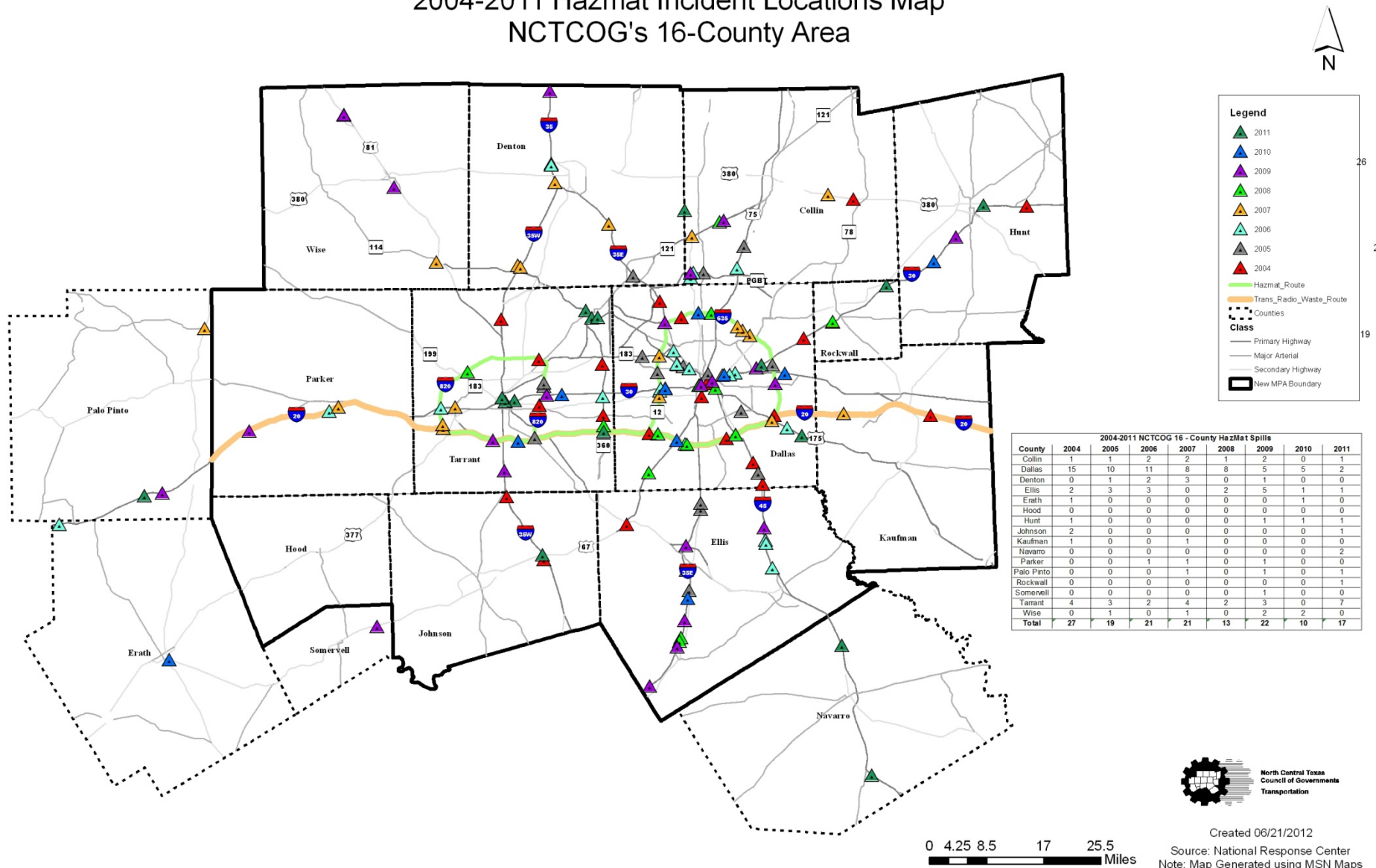
NRC Report Number	Call Type
Date	Responsible Company
County	Type of Incident
City	Incident Cause
State	Material Involved
Location	

NRC SAMPLE

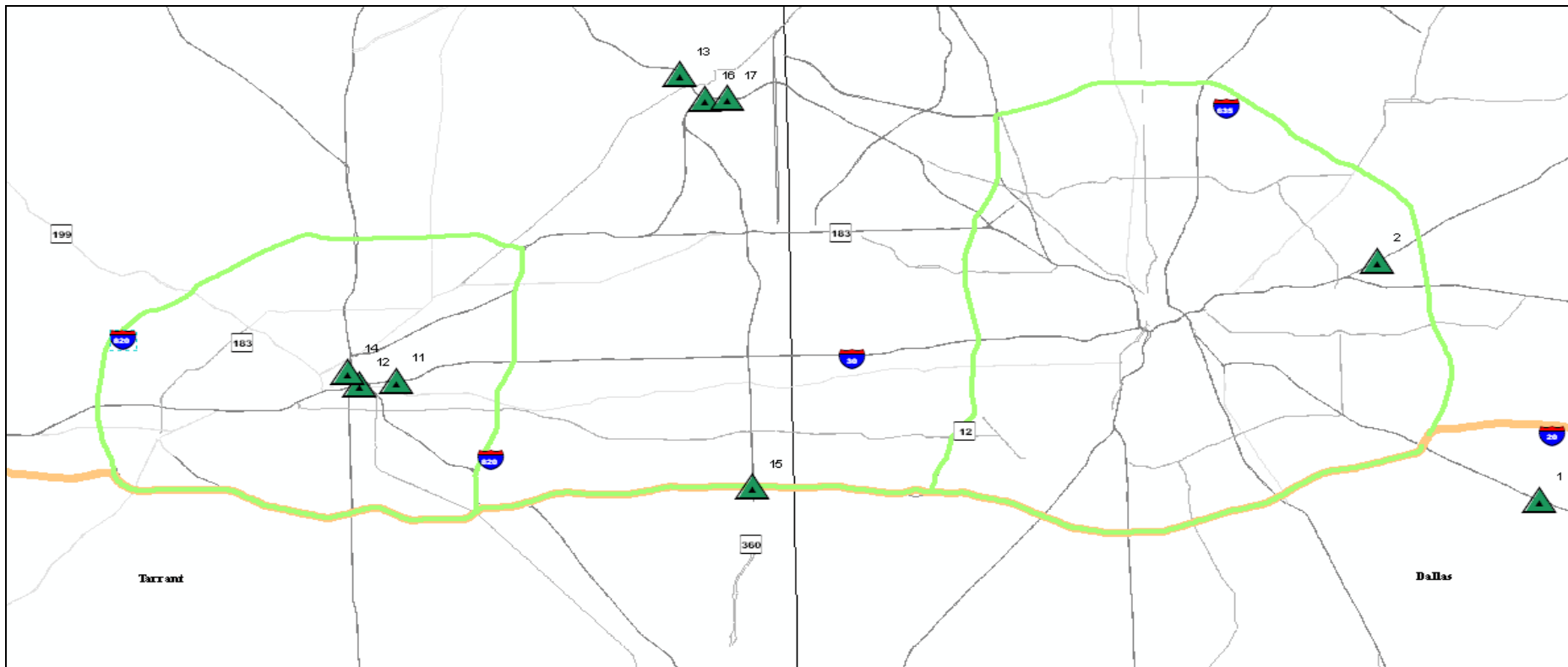
SEQNOS	DATE_TIME_ RECEIVED	DATE_TIME_ COMPLETE	CALL TYPE	RESPONSIBLE_ COMPANY	RESPONSIBLE_ ORG_TYPE	RESPONSIBLE_ CITY
927517	1/1/2010 0:49	1/1/2010 0:55	INC	OCCEDENTAL PETROLEUM	PRIVATE ENTERPRISE	TUPMAN
927518	1/1/2010 1:55	1/1/2010 2:05	INC	SOUTHERN NATURAL GAS COMPANY	PRIVATE ENTERPRISE	BIRMINGHAM
927519	1/1/2010 4:33	1/1/2010 4:40	INC	NORFOLK SOUTHERN	PRIVATE ENTERPRISE	ATLANTA
927520	1/1/2010 7:01	1/1/2010 7:11	INC	SOLAR TRANSPORT	PRIVATE ENTERPRISE	WEST DES MOINES
927521	1/1/2010 7:16	1/1/2010 7:28	INC		UNKNOWN	
927522	1/1/2010 8:10	1/1/2010 8:26	INC		UNKNOWN	
927523	1/1/2010 7:58	1/1/2010 8:23	INC	K-SEA TRANSPORTATION	PRIVATE ENTERPRISE	STATEN ISLAND
927524	1/1/2010 8:27	1/1/2010 8:37	INC		UNKNOWN	
927525	1/1/2010 9:13	1/1/2010 9:21	INC	APACHE	PRIVATE ENTERPRISE	LAFAYETTE
927526	1/1/2010 9:47	1/1/2010 9:53	INC	SHENANDOAH'S PRIDE DAIRY	PRIVATE ENTERPRISE	SPRINGFIELD
927527	1/1/2010 9:51	1/1/2010 9:58	INC	SUBURBAN PROPANE	PRIVATE ENTERPRISE	KINGSTON
927528	1/1/2010 10:15	1/1/2010 10:23	INC		UNKNOWN	
927529	1/1/2010 10:23	1/1/2010 10:32	INC	MAGNOLIA MARINE	PRIVATE ENTERPRISE	VICKSBURG

NRC EXAMPLE

2004-2011 Hazmat Incident Locations Map
NCTCOG's 16-County Area



NRC EXAMPLE CONTINUED



2011

#	NRC #	DESCRIPTION OF INCIDENT	INCIDENT CAUSE	DATE/TIME	LOCATION	COUNTY
1	966779	CALLER STATED DUE TO A TWO VEHICLE TRAFFIC ACCIDENT THERE WAS A RELEASE OF LIQUID PROPANE GAS TO THE AIR FROM AN OVERTURNED TANKER TRUCK. THIS INCIDENT RESULTED IN THE ROADWAY BEING CLOSED FOR FOUR HOURS. CALLER STATED THE PUMP ON THE TRUCK WAS STRUCK AND THIS RESULTED IN A RELEASE OF LIQUID PROPANE GAS. DUE TO THIS INCIDENT TWO PERSONS WERE INJURED AND WENT TO THE HOSPITAL.	TRANSPORT ACCIDENT	2/6/2011 11:00	DALLAS NORTH TOLLWAY AND COTTON GIN ROAD	COLLIN

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