

Regional Transportation Safety Planning Activities

1. Proposed Regional Data Mining and Visualization Tool
2. Safety Element of the CLRP
3. Regional Traffic Safety Data

Briefing to the Bicycle & Pedestrian Subcommittee

Tuesday, January 19, 2010

Item #6

Transportation Safety Subcommittee

- Includes representatives of State DOT's, WMATA, law enforcement, other agencies interested in transportation safety
- Oversees the Safety Element of the Constrained Long-Range Plan, other regional transportation safety projects
- Meets as needed, typically three times per year

Proposed Regional Data Mining & Visualization Tool

- Presented & Demonstrated to Transportation Safety Subcommittee October 30, 2009
 - Developed by University of Maryland CATT Lab www.cattlab.umd.edu.
 - Maryland version cost \$170,000, nearly complete
 - Tool allows data in police crash reports to be queried through an intuitive, web-based interface
 - Allows complex queries, yet easy to use
 - No SQL queries required
 - Menus and Checkboxes
 - Geolocated crash data
 - Intersection, Corridor, and Area queries
 - Useful for state safety analysts, regional planners, and local traffic engineers
- DDOT representatives expressed strong interest
- VDOT representatives expressed guarded interest
 - Cited budget difficulties, possible duplication of current efforts

Next Steps

- Two Alternatives:
 - A single regional tool
 - Disadvantage: Would require reconciling differences in State Safety Data
 - Advantage: Would readily allow region-level queries
 - A separate but similar tool for each State
- Scoping Study
 - Comparison analysis of Virginia, Maryland, and District of Columbia Police Crash Databases
 - Options and budgets for single regional or separate tools
 - Cost \$15k
 - Funding source needs to be identified

Safety Element of the Long-Range Transportation Plan

- A Federal requirement
- Common goals of the State Strategic Highway Safety Plans (SHSP)s of DC, Maryland, & Virginia goals are incorporated into the CLRP Safety Element
- A regional look at Transportation Safety
 - Transportation Planning Board Members
 - Includes all of Charles County
- A short, web-based document
 - Update by March 1st, 2010

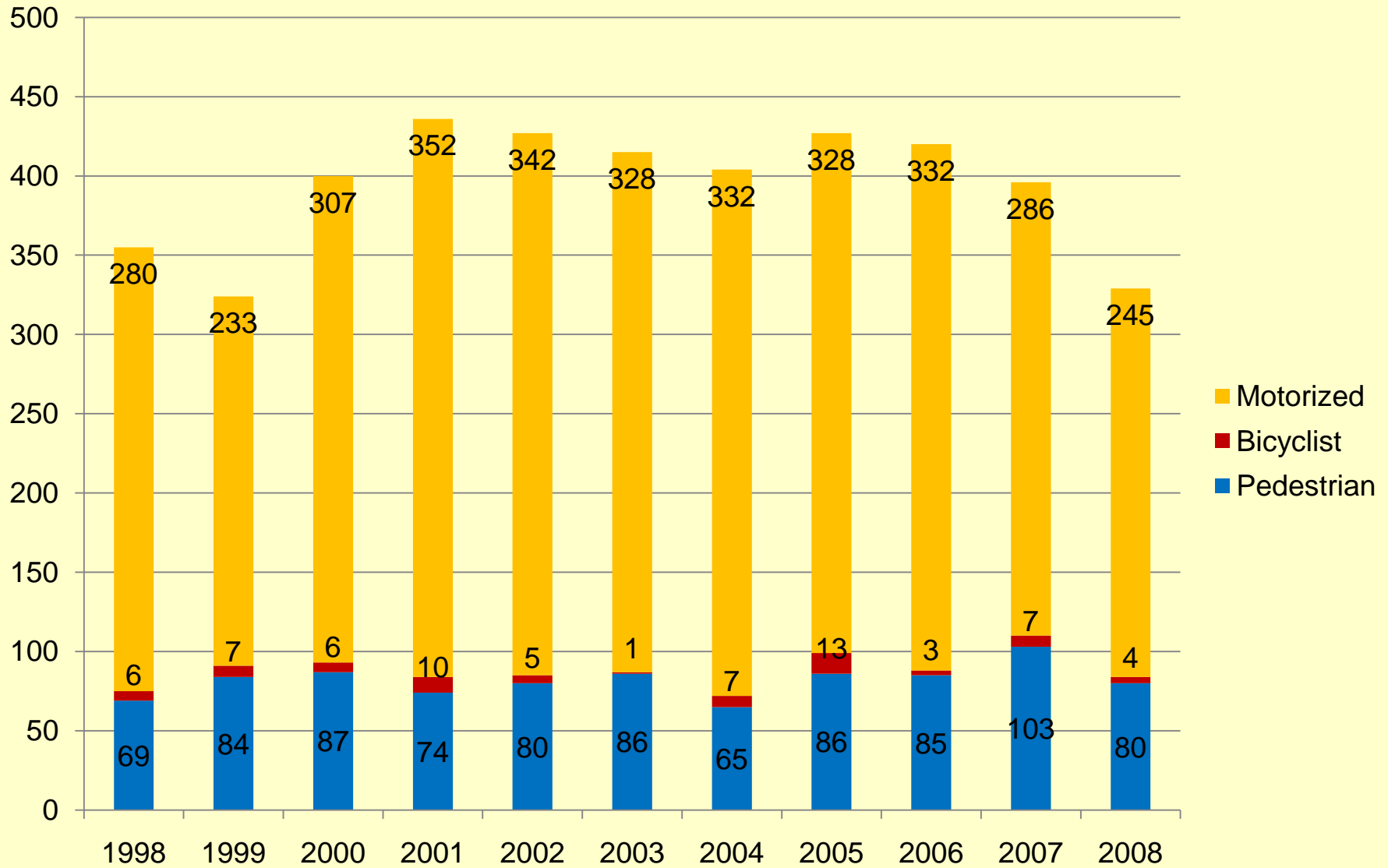
Emphasis Areas in Common from the SHSP's

1. Pedestrians
2. Impaired Driving
3. Speeding & Aggressive Driving
4. Occupant Protection (seatbelts)
5. Driver Competence and Licensing
6. Young and Older Drivers
7. Motorcycles
8. Large Trucks
9. Run off the Road
10. Intersections
11. Work Zone
12. Information and Decision Support Systems (Traffic Records)

Traffic Fatalities

Jurisdiction	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Total	Average
District of Columbia	54	41	52	72	50	68	45	49	41	54	39	565	51.4
Charles County	25	26	30	21	27	20	16	40	30	23	14	272	24.7
Frederick County	25	32	27	37	18	18	28	33	33	25	21	297	27.0
Montgomery County	46	49	60	60	67	52	79	44	58	49	48	612	55.6
Prince George's County	111	79	102	128	141	122	121	134	111	126	130	1305	118.6
Arlington County	3	8	14	9	12	9	6	8	3	5	8	85	7.7
City of Alexandria	4	4	5	5	6	3	3	2	1	6	4	43	3.9
Fairfax County	45	49	70	53	64	62	64	61	67	53	29	617	56.1
City of Fairfax	0	0	0	1	1	2	0	2	3	2	0	11	1.0
City of Falls Church	0	0	1	1	1	3	0	0	0	0	0	6	0.5
Loudoun County	21	11	9	15	16	24	22	20	20	23	11	192	17.5
City of Manassas	0	1	2	2	1	1	0	3	1	3	0	14	1.3
City of Manassas Park	0	1	0	0	0	0	0	0	0	0	0	1	0.1
Prince William County	19	24	27	31	23	30	22	29	46	27	25	303	27.5
Total Washington	353	325	399	435	427	414	406	425	414	396	329	4323	393.0

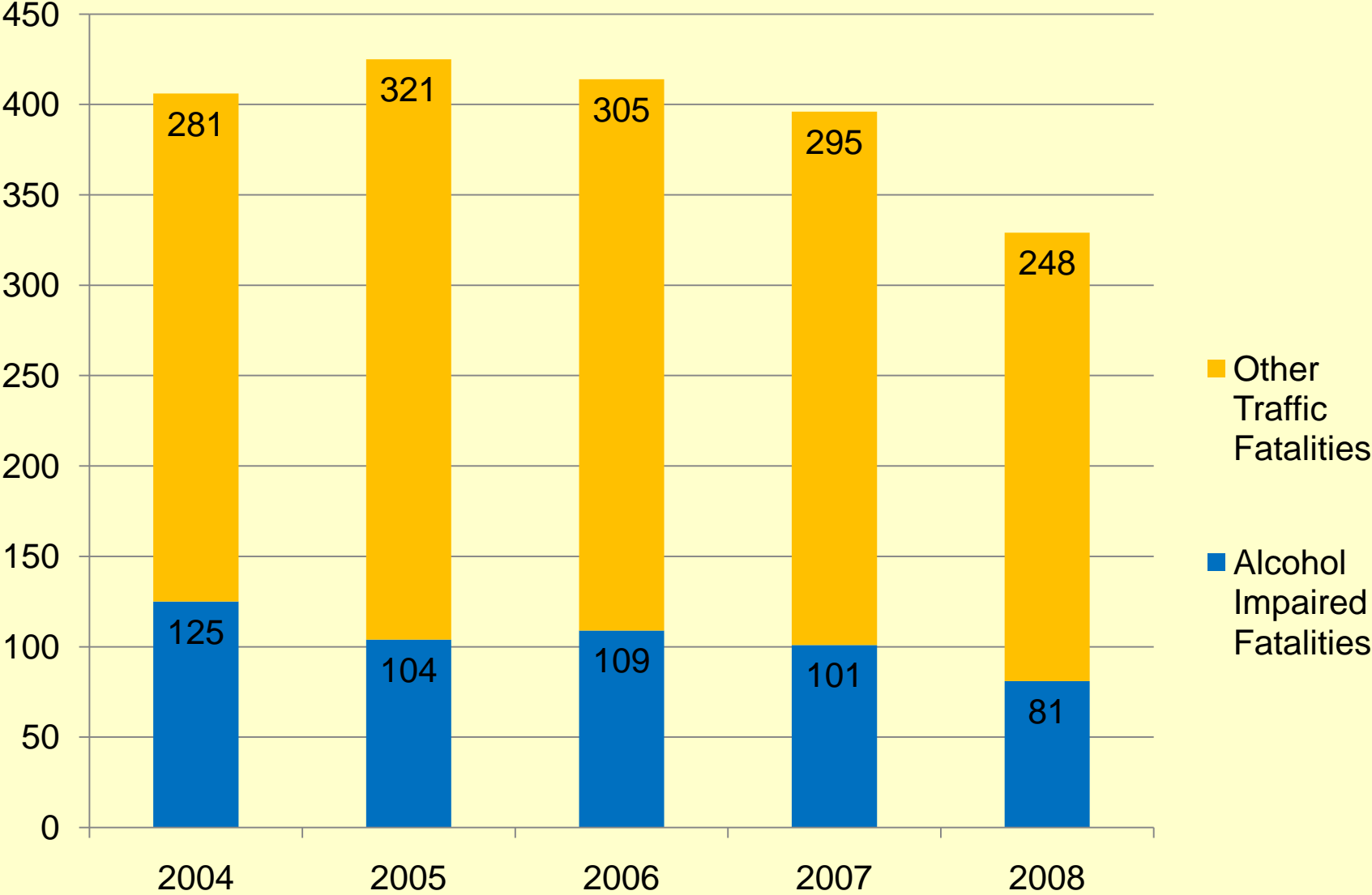
EA 1: Pedestrian & Bicyclist Fatalities in the Washington Region



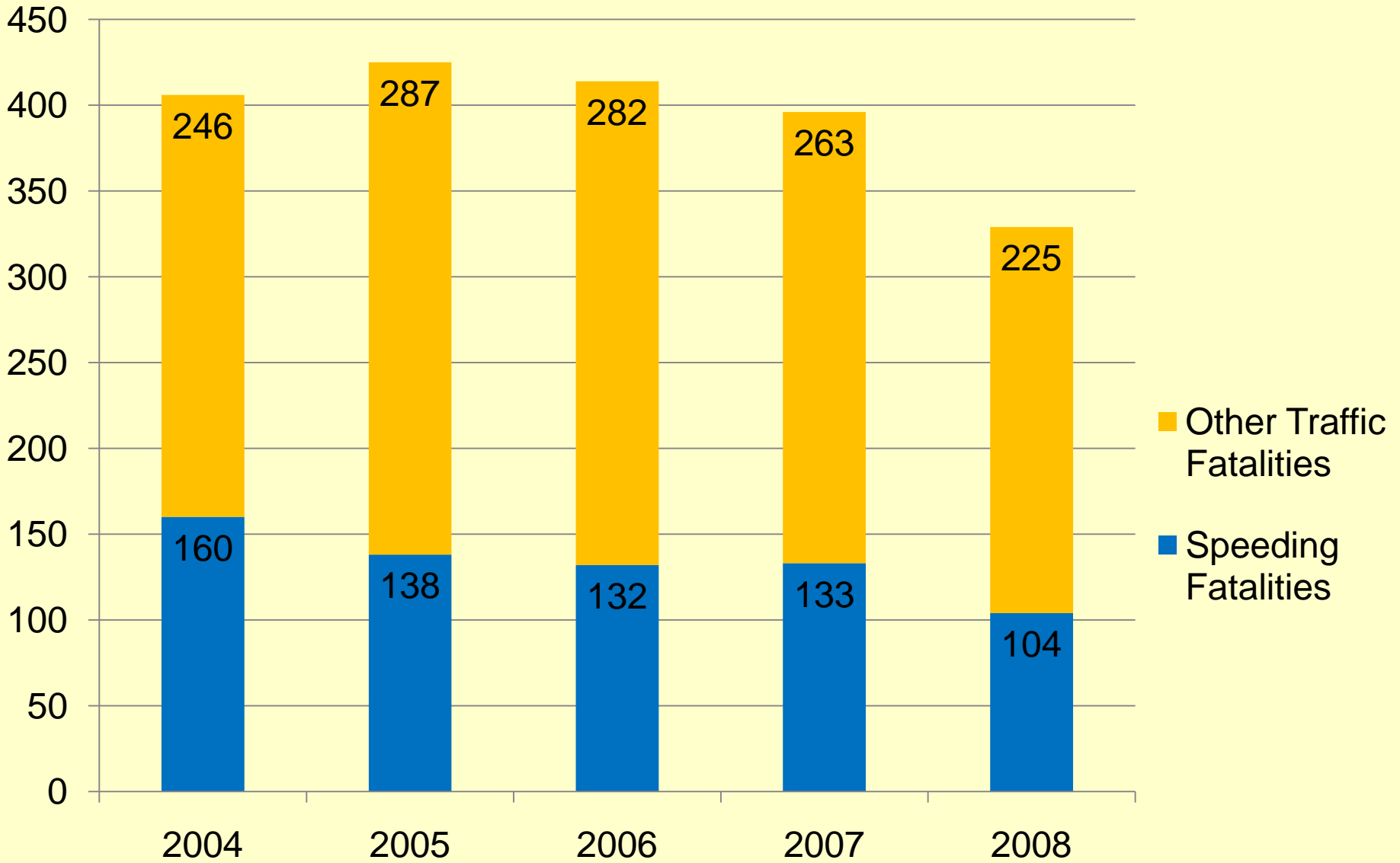
Pedestrian & Bicyclist Fatalities

Jurisdiction	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Total	Average
District of Columbia	17	18	20	15	9	18	14	19	17	27	15	189	18.9
Charles County	3	6	3	2	5	3	1	6	2	6	1	38	3.8
Frederick County	2	6	4	0	2	4	2	2	4	1	0	27	2.7
Montgomery County	12	20	17	11	16	12	15	12	15	17	16	163	16.3
Prince George's County	25	19	16	30	28	30	19	36	20	29	41	293	29.3
Arlington County	2	2	5	4	2	3	2	3	1	1	1	26	2.6
City of Alexandria	0	3	2	2	3	2	1	2	1	2	0	18	1.8
Fairfax County	10	13	20	18	12	7	16	11	20	18	4	149	14.9
City of Fairfax	0	0	0	0	1	1	0	1	0	0	0	3	0.3
City of Falls Church	0	0	1	0	1	0	0	0	0	0	0	2	0.2
Loudoun County	1	1	1	1	3	3	2	3	1	3	0	19	1.9
City of Manassas	0	1	1	0	0	0	0	0	0	0	0	2	0.2
City of Manassas Park	0	0	0	0	0	0	0	0	0	0	0	0	0
Prince William County	1	3	2	0	3	3	2	2	1	6	6	29	2.9
Total Washington	73	92	92	83	85	86	74	97	82	110	84	958	95.8

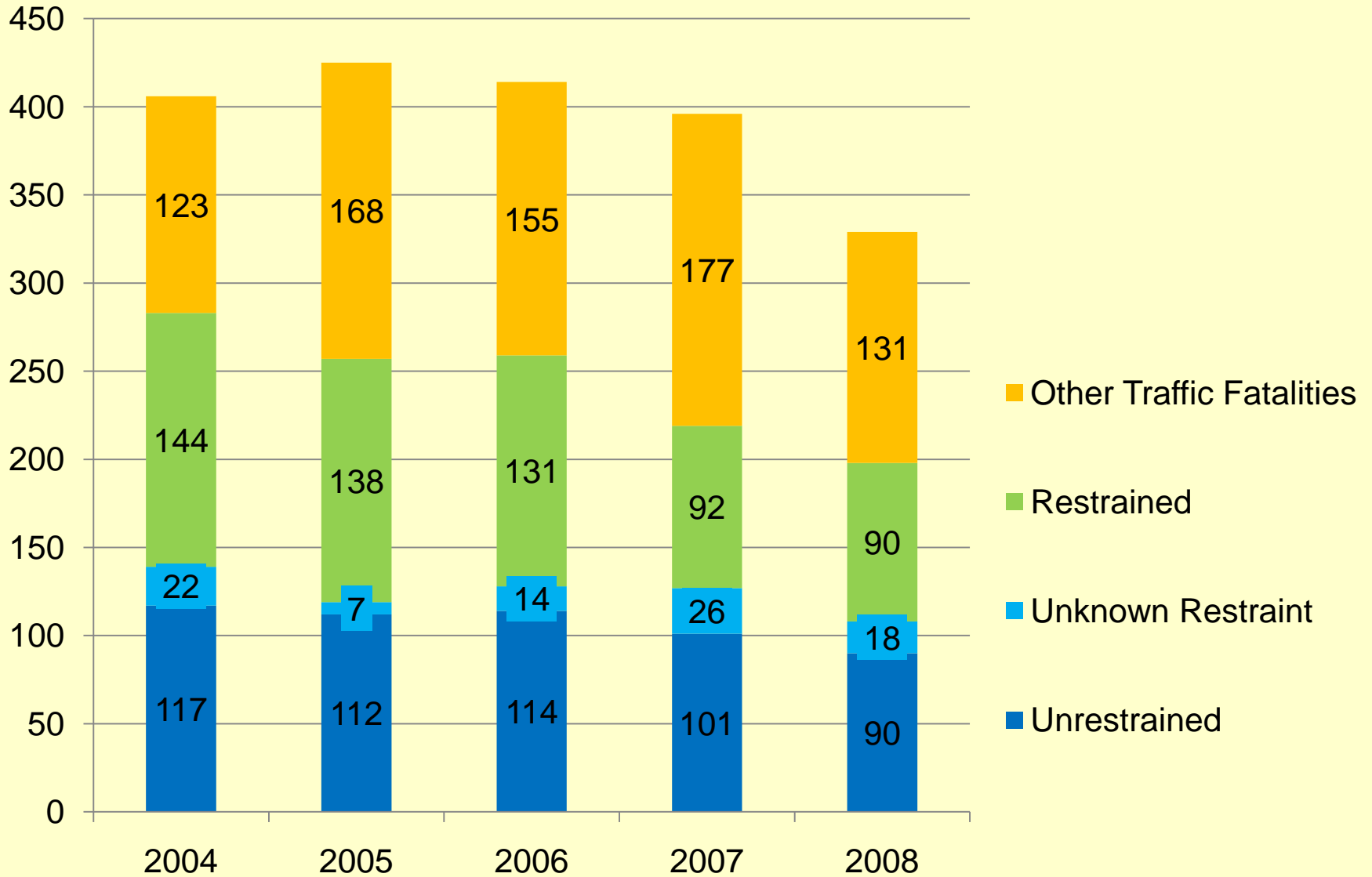
EA2: Alcohol Impaired Fatalities



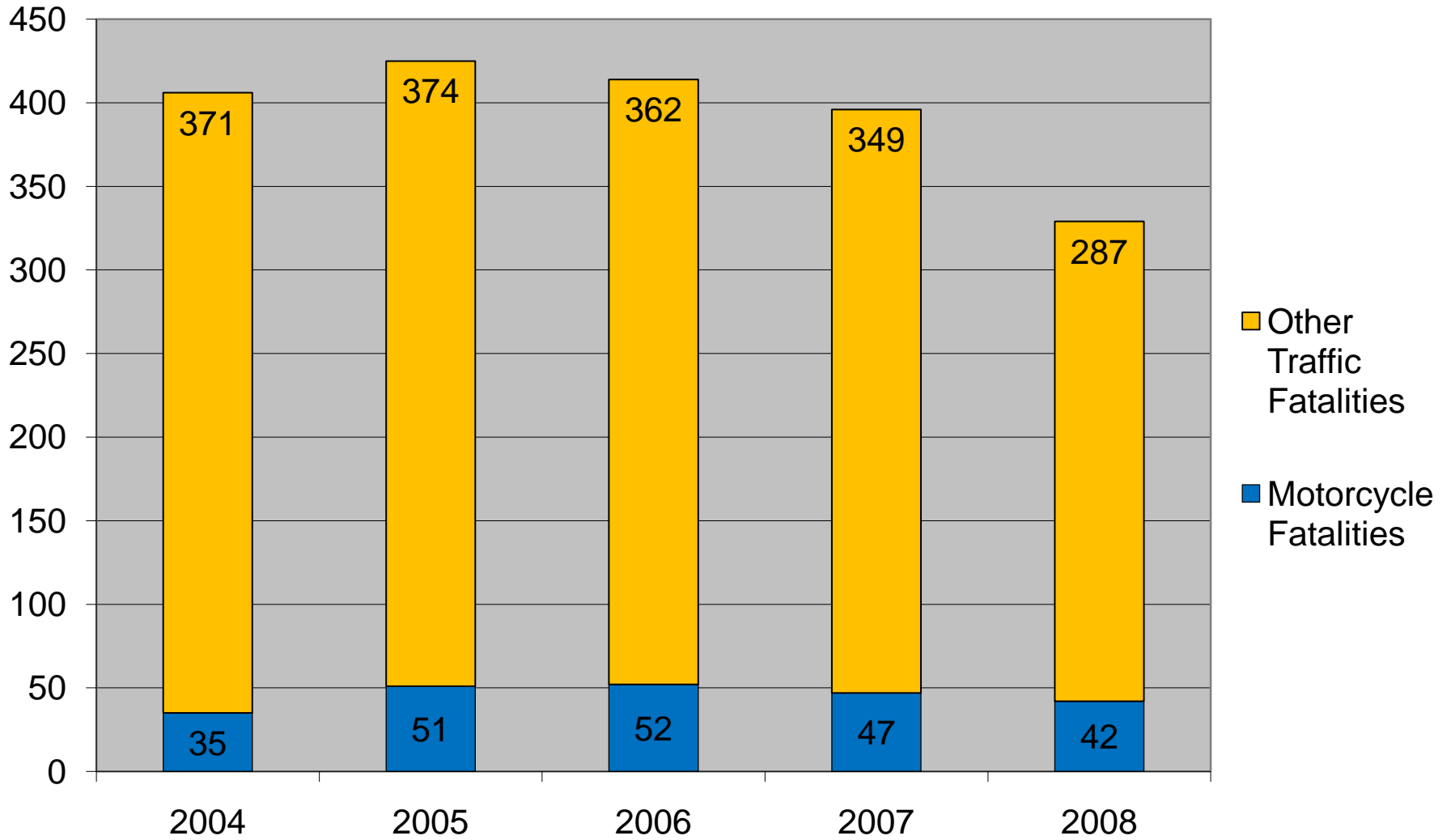
EA 3: Speeding Fatalities in the Washington Region



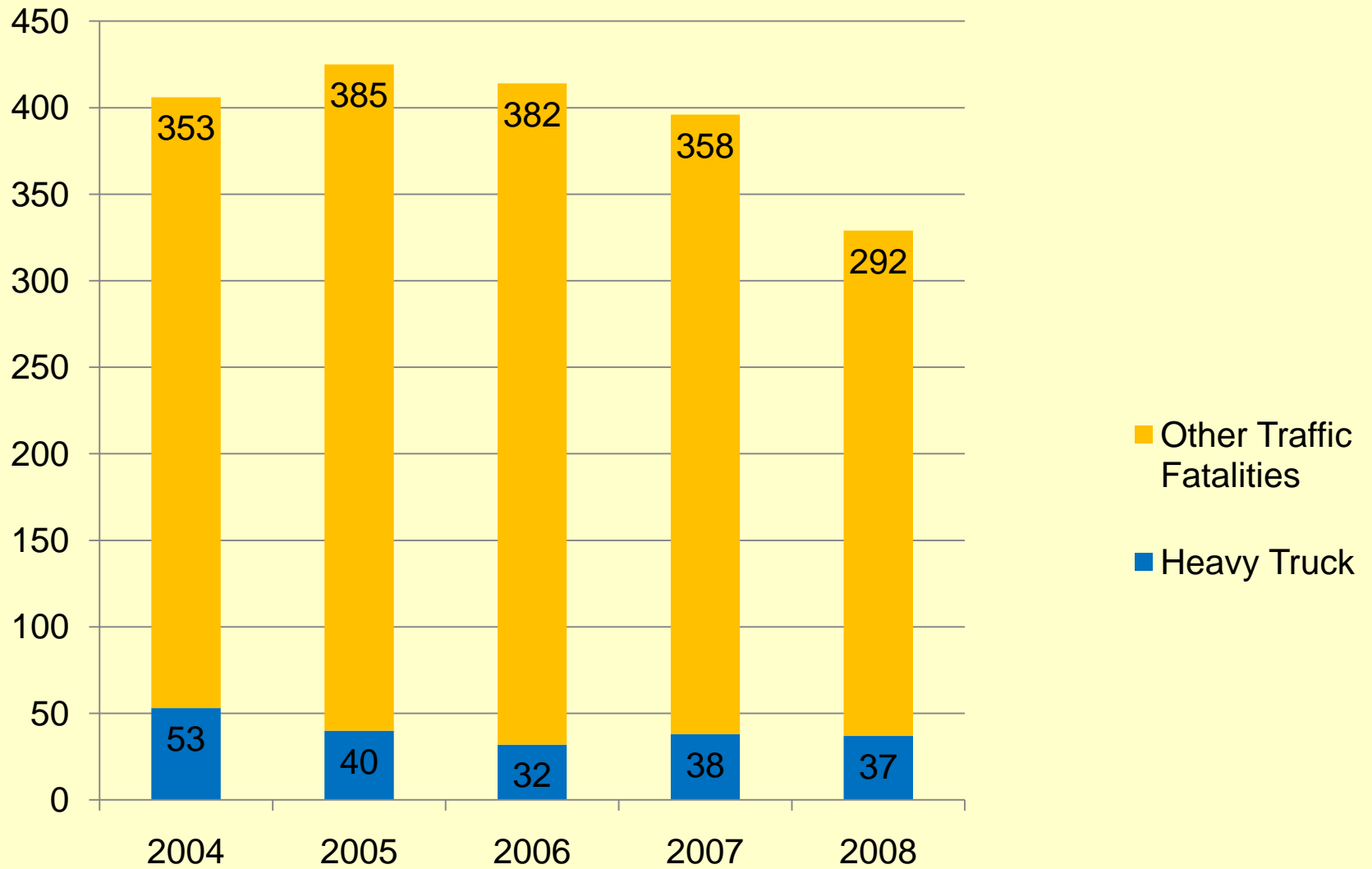
EA4: Occupant Fatalities



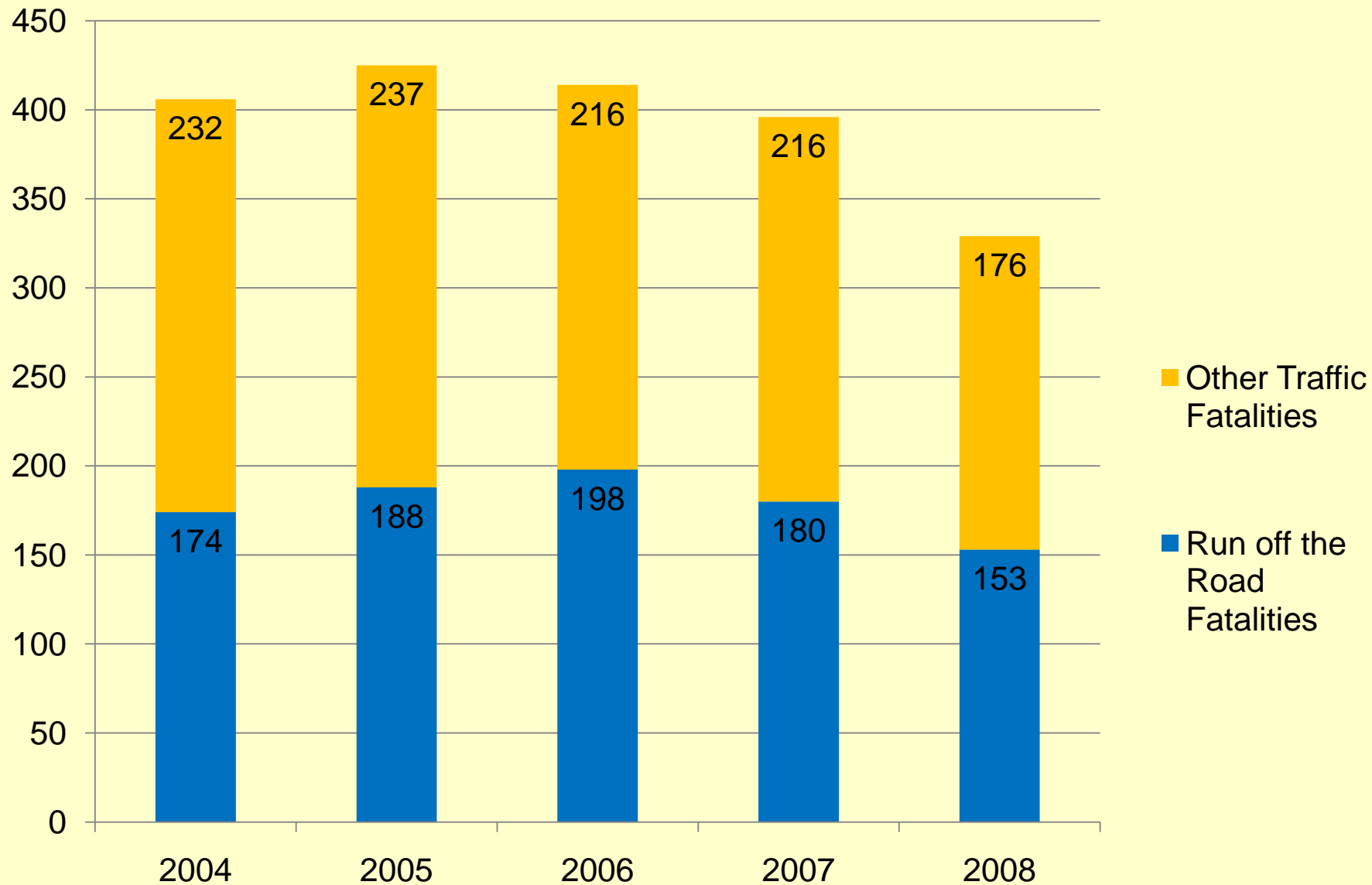
EA 7: Motorcycle Fatalities in the Washington Region



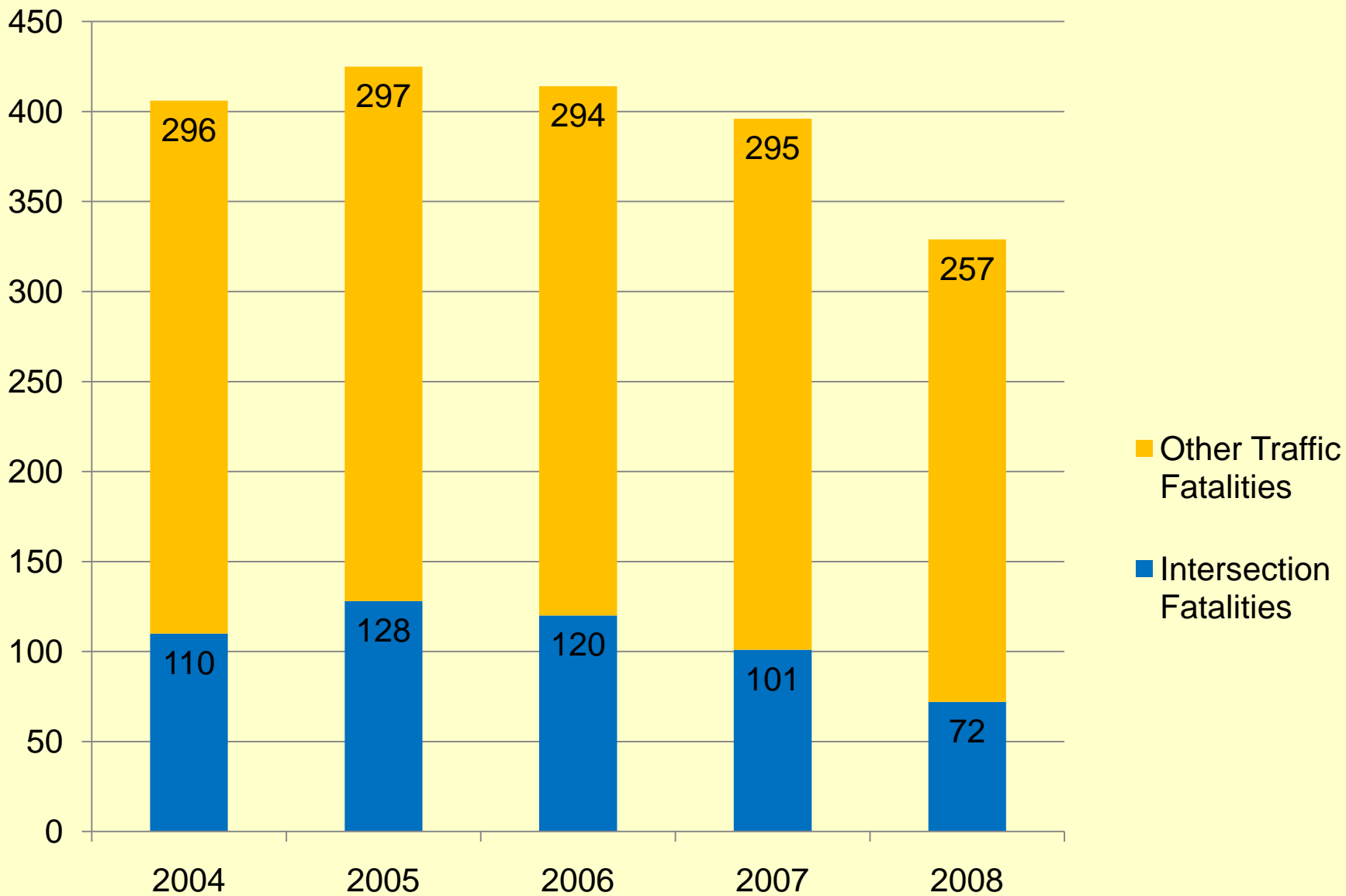
EA 8: Heavy Truck Fatalities



EA 9: Run off the Road Fatalities



EA 10: Intersection Fatalities



Traffic Fatalities in the Washington Region by Emphasis Area*

Emphasis Area	2004	2005	2006	2007	2008	Total**	Average
1. Pedestrians	65	86	85	103	80	419	83.8
2. Impaired Driving	125	104	109	101	81	520	104.0
3. Speeding	160	138	132	133	104	667	133.4
4. Occupant Protection (Seatbelts)	117	112	114	101	90	534	106.8
7. Motorcycles	35	51	52	47	42	227	45.4
8. Large Trucks	53	40	32	38	37	200	40.0
9. Run off the Road	174	188	198	180	153	893	178.6
10. Intersections	110	128	120	101	72	531	106.2

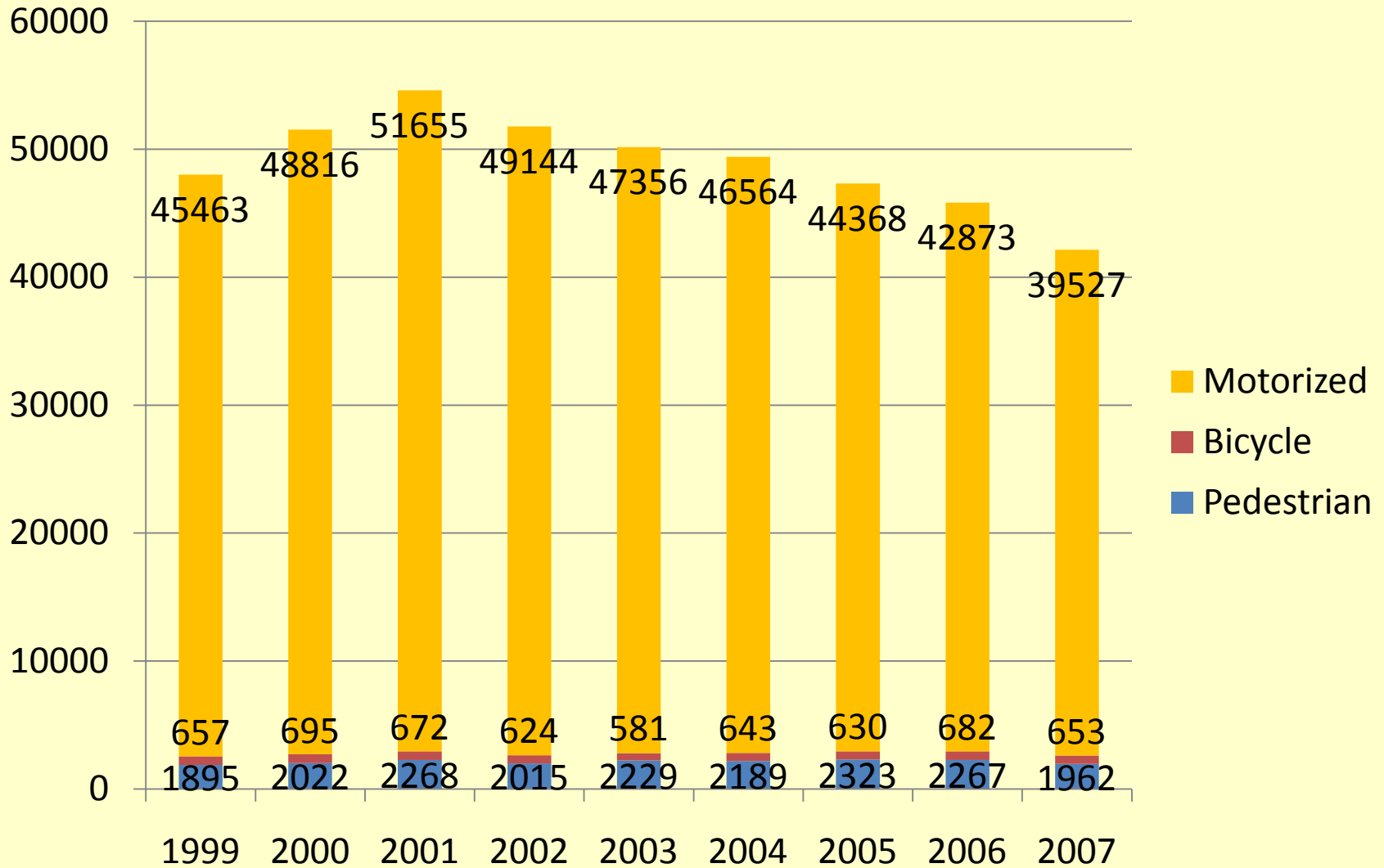
*Source: NHTSA 2008 State Traffic Safety Information.

**A Fatality Can Be in More Than One Category. Therefore Sum of the Individual Cells Will Not Equal the Total Due to Double Counting

Conclusions from NHTSA Fatality Data

- Traffic Deaths are declining in the Washington Region, as they are nationally
- Run off the road, Speeding, Seatbelts, Alcohol Impaired Driving, and Intersection collisions are implicated in the most deaths
- Pedestrian, Motorcycle, and Bicycle Deaths are not declining
- Heavy Truck Deaths are declining
- Fatality Data for young/old drivers and work zones not available at local level from NHTSA

Injury Trends: 1999-2007



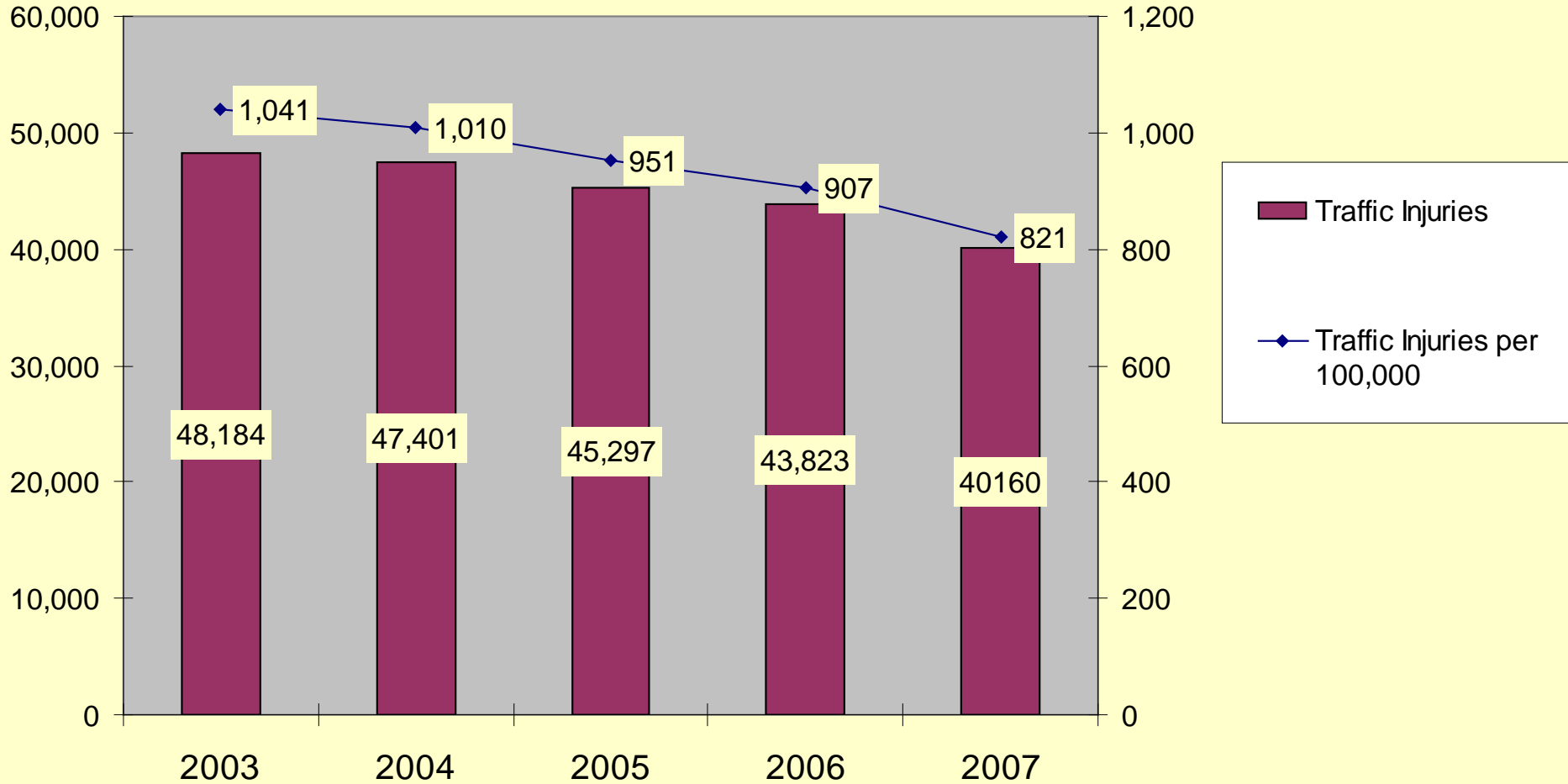
All Traffic Injuries

Jurisdiction	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Total	Average
District of Columbia	6570	7228	10107	10758	8775	8233	8054	7555	7061	6571	80912	8091
Charles County	1646	1647	1558	1694	1679	1570	1582	1483	1375	1449	15683	1568
Frederick County	2016	2016	2051	1967	1950	1944	1707	1938	1732	1835	19156	1916
Montgomery County	8101	8182	8205	8958	8787	8753	8348	7619	7695	6905	81553	8155
Prince George's County	9993	9261	9620	10038	10044	9414	9162	8807	8636	7771	92746	9275
Arlington County	1955	1946	1894	1966	1658	1484	1612	1438	1358	1195	16506	1651
City of Alexandria	1380	1407	1309	1382	1395	1343	1419	1513	1372	1467	13987	1399
Fairfax County	8523	9117	9405	9865	9657	9188	9186	8741	8519	7971	90172	9017
City of Fairfax	368	332	366	415	383	377	298	317	305	238	3399	340
City of Falls Church	112	146	152	97	118	247	253	244	240	131	1740	174
Loudoun County	1129	1347	1419	1643	1654	1740	1921	1954	1704	1678	16189	1619
City of Manassas	385	323	345	439	390	398	414	400	446	291	3831	383
City of Manassas Park	20	80	52	56	45	59	41	35	45	18	451	45
Prince William County	2840	2984	3050	3316	3246	3413	3395	3272	3328	2615	31459	3146
Washington Total	47036	48015	51533	54595	51783	50166	49396	47321	45822	42142	487809	48781

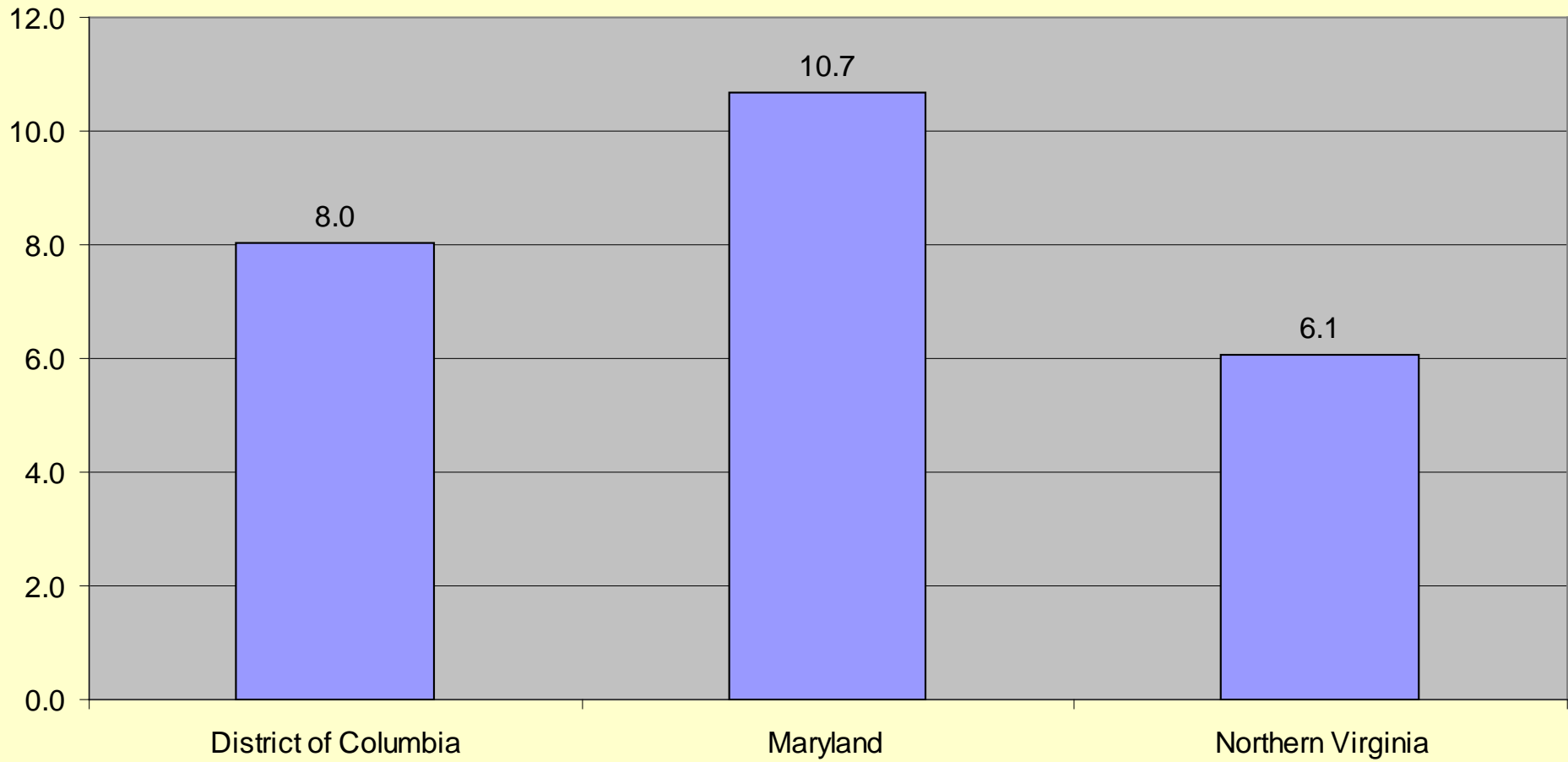
Pedestrian & Bicyclist Injuries

Jurisdiction	1999	2000	2001	2002	2003	2004	2005	2006	2007	Total	Average
District of Columbia	718	851	935	779	844	962	998	953	769	7809	868
Charles County	31	34	60	35	44	53	57	34	46	394	44
Frederick County	61	71	62	72	71	55	55	52	40	539	60
Montgomery County	482	499	514	477	539	524	532	560	534	4661	518
Prince George's County	444	469	517	486	505	456	510	479	485	4351	483
Arlington County	170	185	180	160	154	167	140	178	151	1485	165
City of Alexandria	107	78	105	90	81	67	104	81	87	800	89
Fairfax County	376	379	372	368	388	373	374	402	361	3393	377
City of Fairfax	21	20	22	22	30	22	16	25	18	196	22
City of Falls Church	11	14	13	13	6	9	9	5	4	84	9
Loudoun County	42	36	52	47	52	48	49	52	45	423	47
City of Manassas	11	13	22	15	19	21	28	20	17	166	18
City of Manassas Park	2	7	8	6	2	3	2	5	3	38	4
Prince William County	76	61	78	69	75	72	79	103	55	668	74
Total	2552	2717	2940	2639	2810	2832	2953	2949	2615	25007	2779

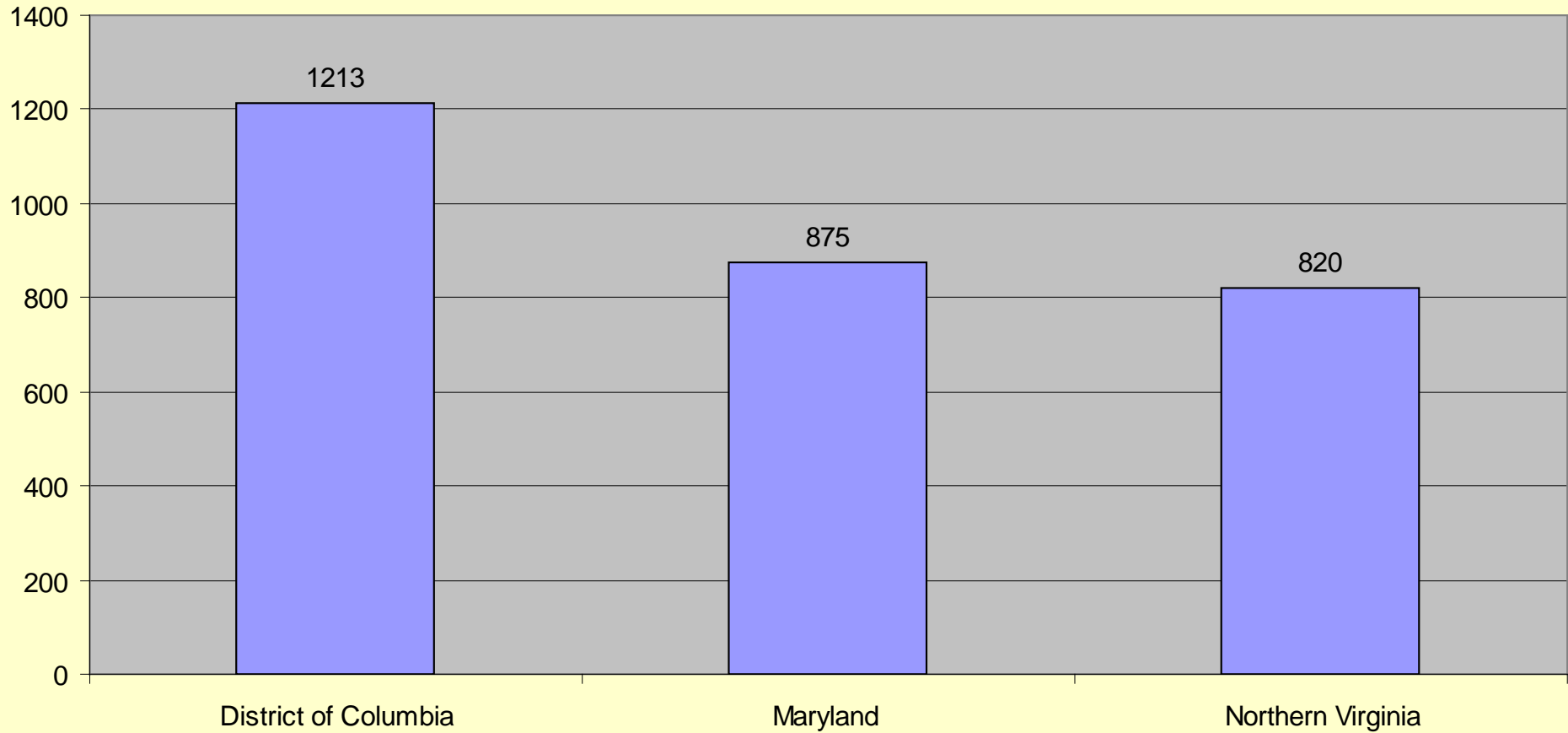
Traffic Injuries per 100,000 Population in the Washington Region, 2003-2007



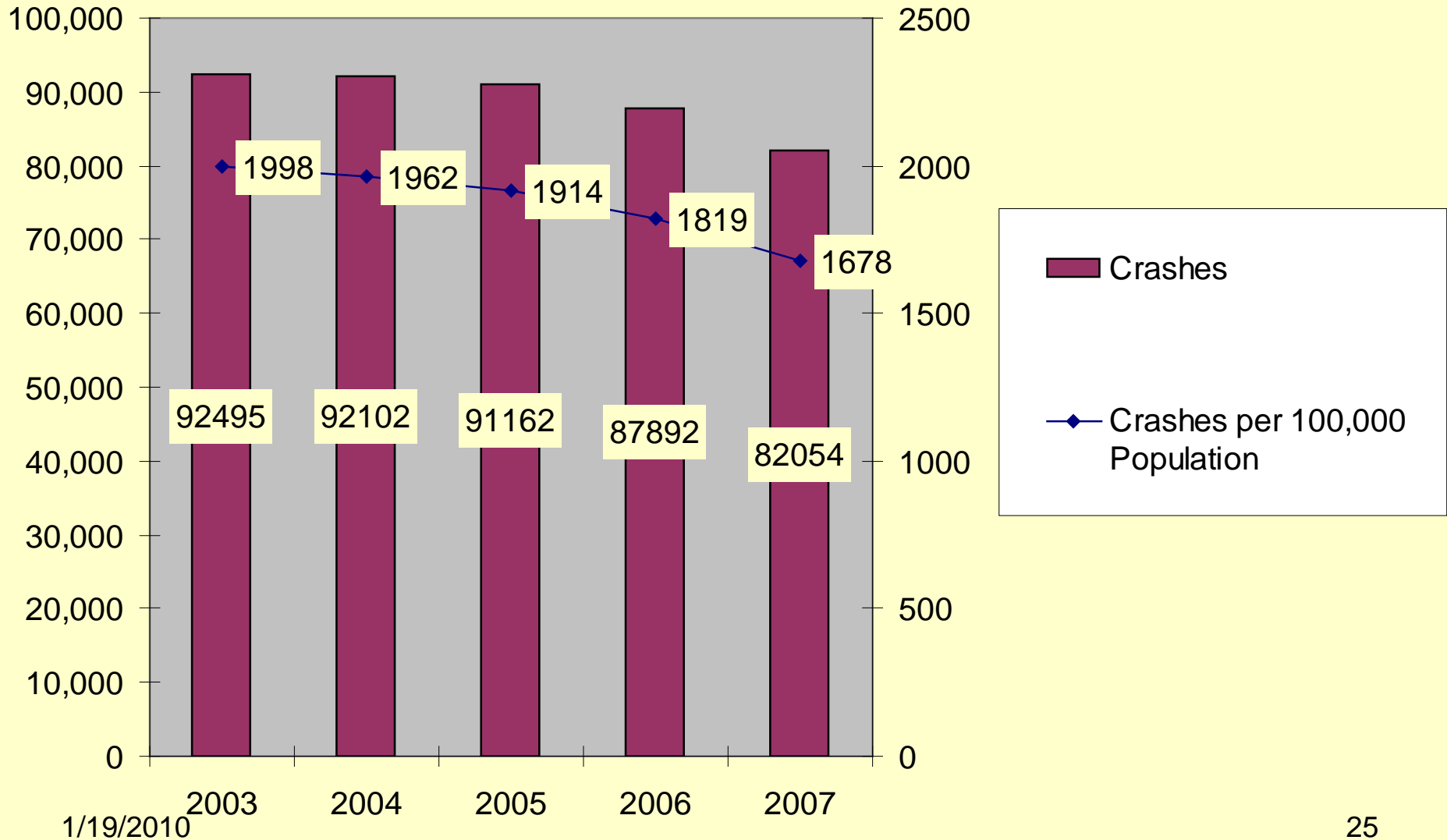
Average Annual Traffic Deaths Per 100,000 Population,
2005-2007



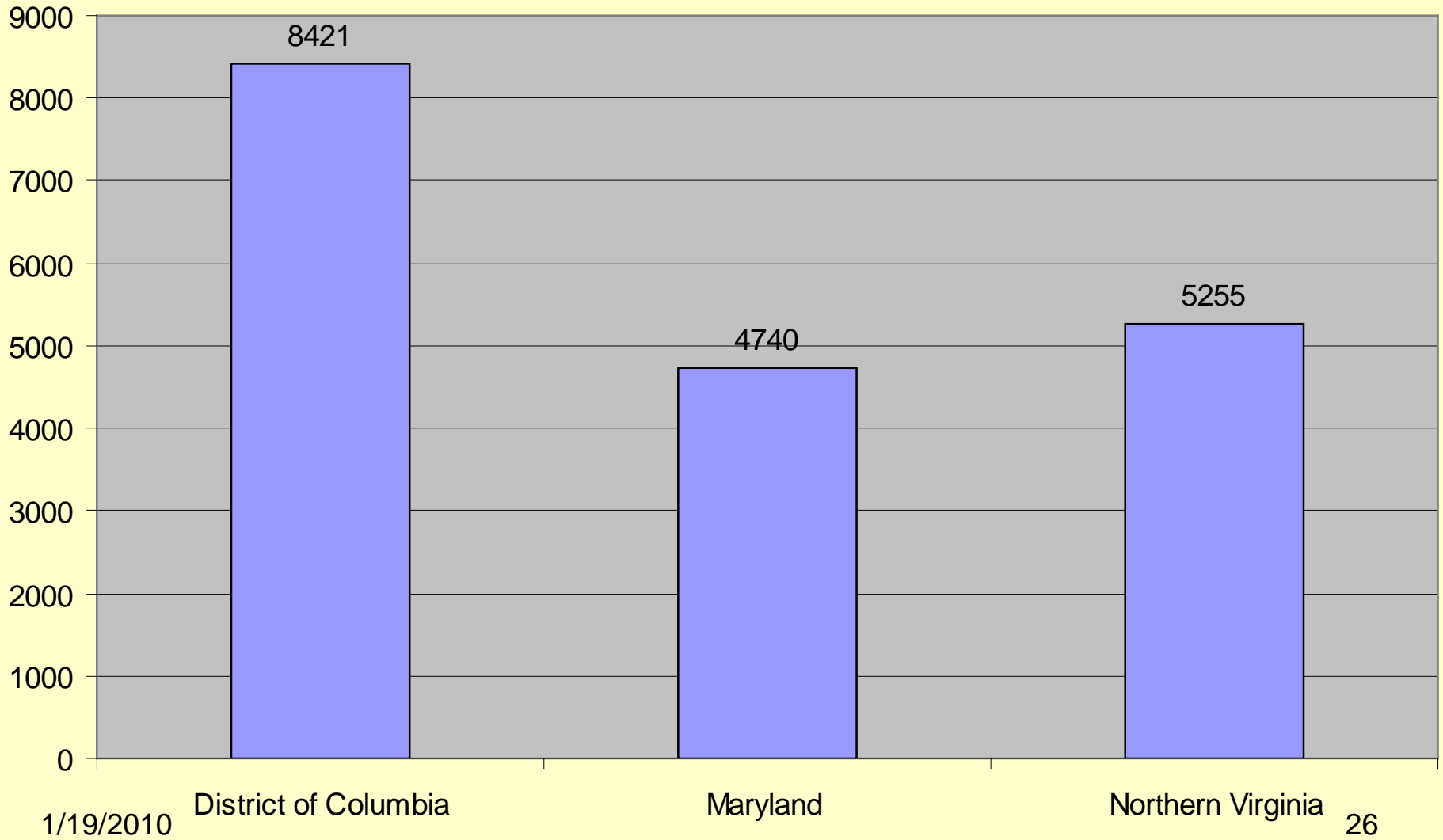
Average Annual Traffic Injuries per 100,000 Population,
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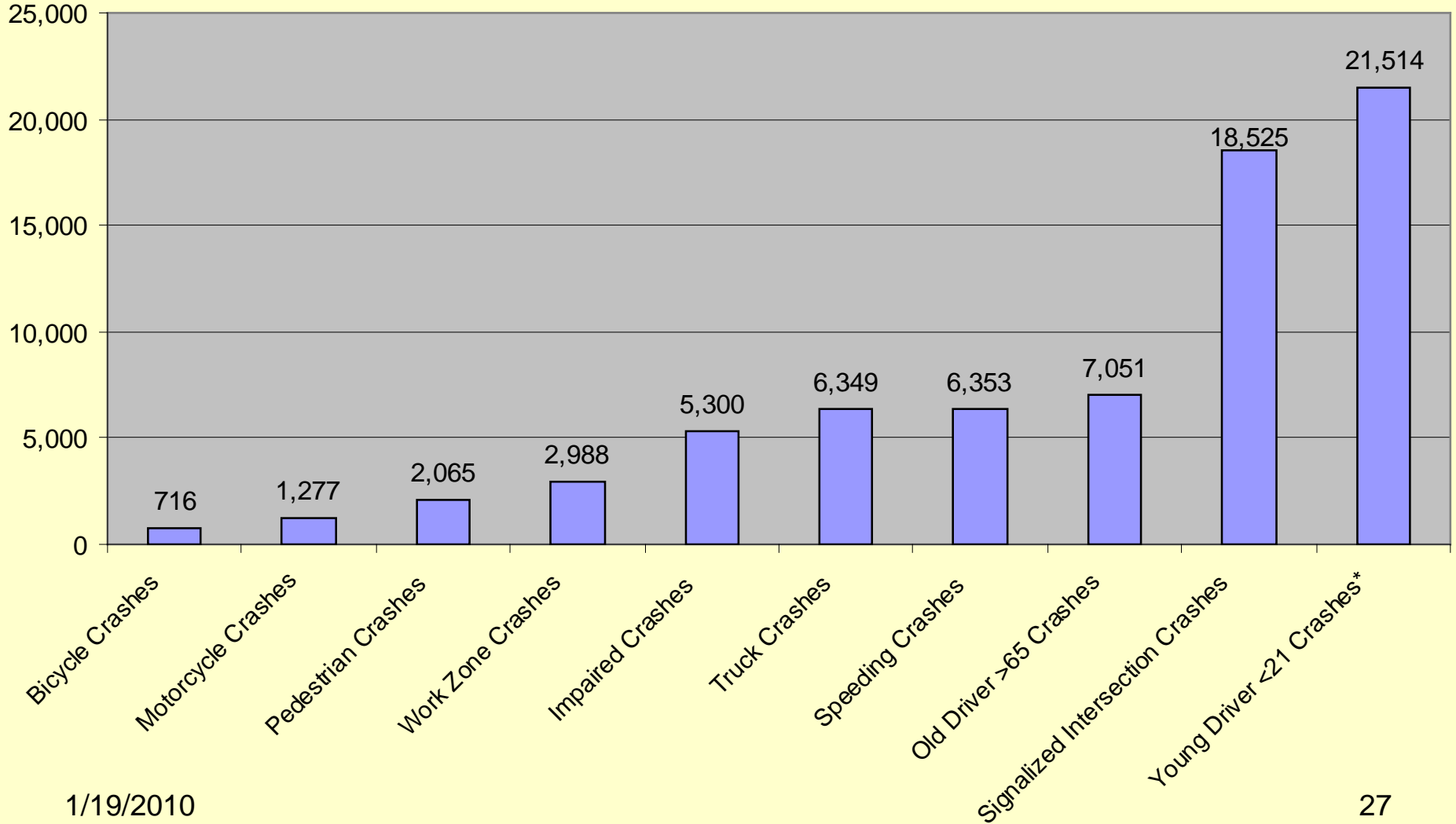
Crashes per 100,000 Population in the Washington Region 2003-2007



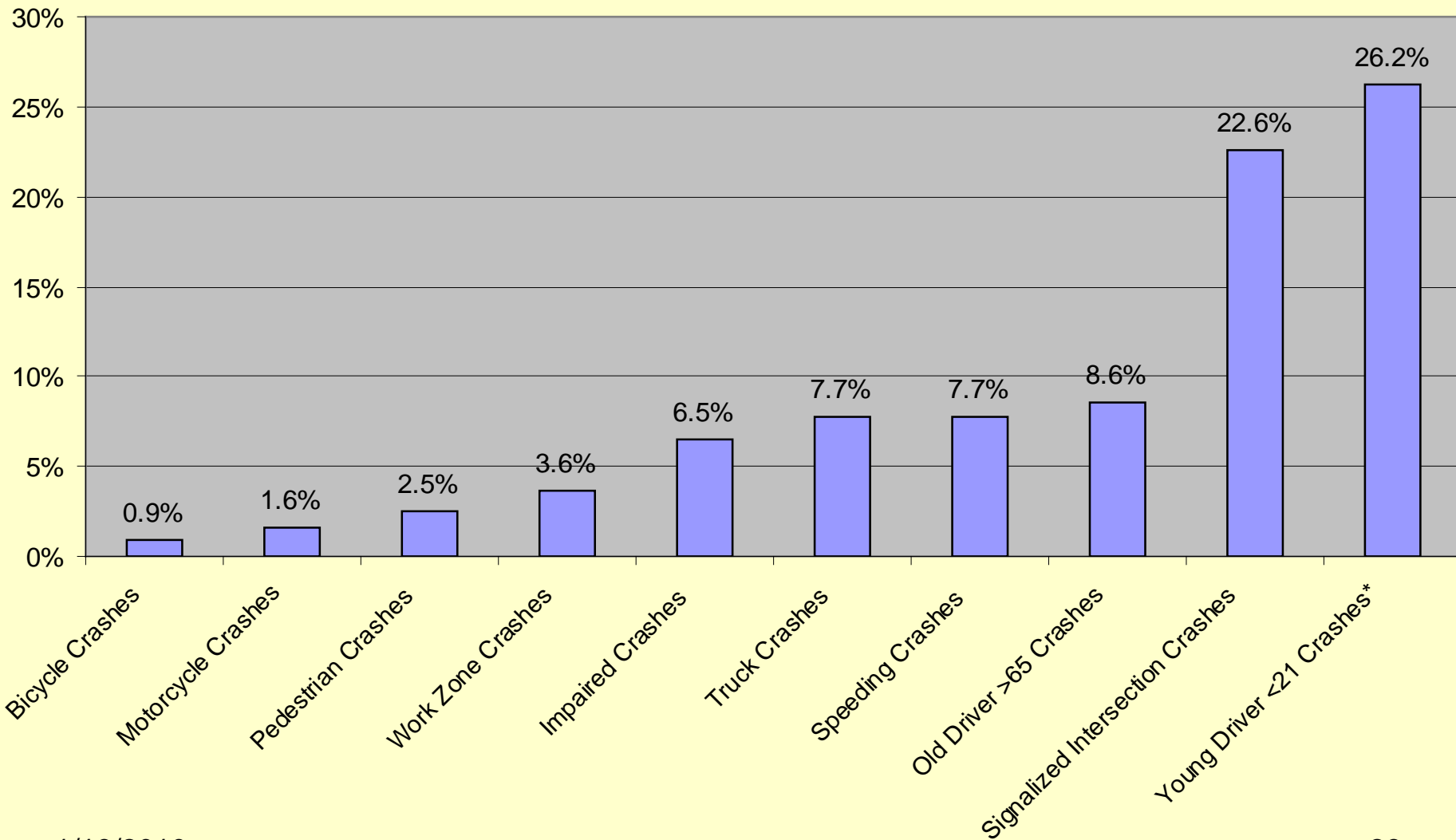
Average Annual Crashes per 100,000 Population
2003-2007



2007 Crash Types in the Washington Region (Total Crashes = 82,054)



2007 Crash Types as a Percent of Total Crashes in the Washington Region (Total = 82,024)



Conclusions

- Regional Fatalities/100,000 are declining
- Injuries/100,000 are declining a little faster
- Significant differences in Fatality, Injury & Crash rates between the States
 - Maryland has the highest death rate
 - DC has the highest injury rate

Crashes vs. Fatalities

- By crashes
 - young drivers and signalized intersections stand out as traffic safety issues
 - Pedestrian (2.5%) and Motorcycle Crashes (1.6%) not significant
- By fatalities
 - Pedestrians - 21% of fatalities
 - Motorcyclists - 12% of fatalities

Sources

- DDOT – Traffic Safety Report Statistics (2006-2008), SHSP
- MHSO – County Spreadsheets, Issue Area Spreadsheets
- VDOT – Access database of Statewide crashes
- NHTSA – FARS Traffic Fatalities Data

Caveat Emptor

- Missing data, discrepancies
 - NHTSA and DDOT fatality numbers conflict
 - DDOT numbers were higher, so I used them
- VDOT Access Database
 - Good: Custom Queries
 - Bad: Unfamiliar database, software = opportunities for error

Next Steps

- **Fill in 2008 Injury and Crash Data as it becomes available**
 - Fatalities, Injuries & Crashes can each tell a different story
 - Calculate rates/population
- **White Paper on Regional Traffic Safety**
 - What do you want to know?
- **Safety Element of the CLRP**
 - Short, web-based, consistent with rest of CLRP
 - January 30, 2010