

# State of the System Report

Fiscal Year 2012



Programming & System Analysis



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## INTRODUCTION

The 2012 State of the System Report (SOS) is a compilation of the physical inventory and status of the Maricopa County Department of Transportation's (MCDOT) infrastructure. It addresses roadway congestion, traffic safety, low volume road paving, bridges, and pavement conditions. Also, included are recommendations for future improvements within each of the infrastructure categories. The SOS report has been produced annually since 1998.

## EXECUTIVE SUMMARY

### **Congestion Management System**

Current and future roadway congestion is addressed in the Congestion Management System Report (CMS). The ratio of a roadway segment's current traffic volume as compared to its physical capacity (V/C Ratio) is used to determine its congestion level. The conservative method of measuring congestion as identified in the MCDOT Roadway Design Manual is used in the report. Roadways under the jurisdiction of MCDOT were analyzed with respect to their V/C ratios and their corresponding Levels of Service (LOS).

### **Safety Management System**

Safety conditions on MCDOT roadways are addressed under the Safety Management System Report (SMS). This report documents the intersection safety improvements made each year and those planned for the following year. In 2012 MCDOT completed 13 intersection safety improvements and has planned an additional 10 to be completed in 2013. The SMS also tracks the overall crash rates and crash history of MCDOT roadways.

### **Low Volume Road Management System**

Paving Low Volume Roads is an annual budgeted activity within MCDOT's Transportation Improvement Program (TIP). Dirt roadways are selected for paving based on criteria established by the MCDOT Transportation Advisory Board and the Federal Environmental Protection Agency through the Arizona Department of Environmental Quality. Since 1983 MCDOT has paved more than 453 miles of dirt roadways.

### **Bridge Management System**

Bridges and other structures are identified in the Bridge Management System (BMS). In 2012 MCDOT maintains 421 bridges and structures. This includes 82 bridges and 339 culverts. No new bridges and structures were added this year however two structures were removed through annexations by cities and towns. Bridges and structures are categorized as Federal or Non-Federal depending on their length. Those

over 20 feet in length are classified as bridges. Those under 20 feet in length are classified as structures. Federal bridges and structures are rated on a 1-100 scale using the Federal Highway Administration's rating system. Those that have a rating between 50 and 80 are eligible for federal bridge rehabilitation funds. Bridges and structures rated below 50 are eligible for federal bridge replacement funds. In 2011 MCDOT had 23 bridges and structures rated between 50 and 80 and only one bridge rated below 50. The BMS lists all of MCDOT bridges and structures as well as their ratings.

Each year MCDOT must report the physical status of their bridges to the Board of Supervisors (BOS) in accordance with the Governments Accounting Standards Board Statement 34 (GASB). The physical condition of MCDOT's bridges is within the targeted bridge sufficiency ratings (BSR) adopted by the BOS.

Criteria	Target Value	Actual Value
% of Bridges and Structures with BSR > 70	min. 90%	98.8%
% of Bridges & Structures with BSR < 50	max. 3%	0%

### Roadway Management System

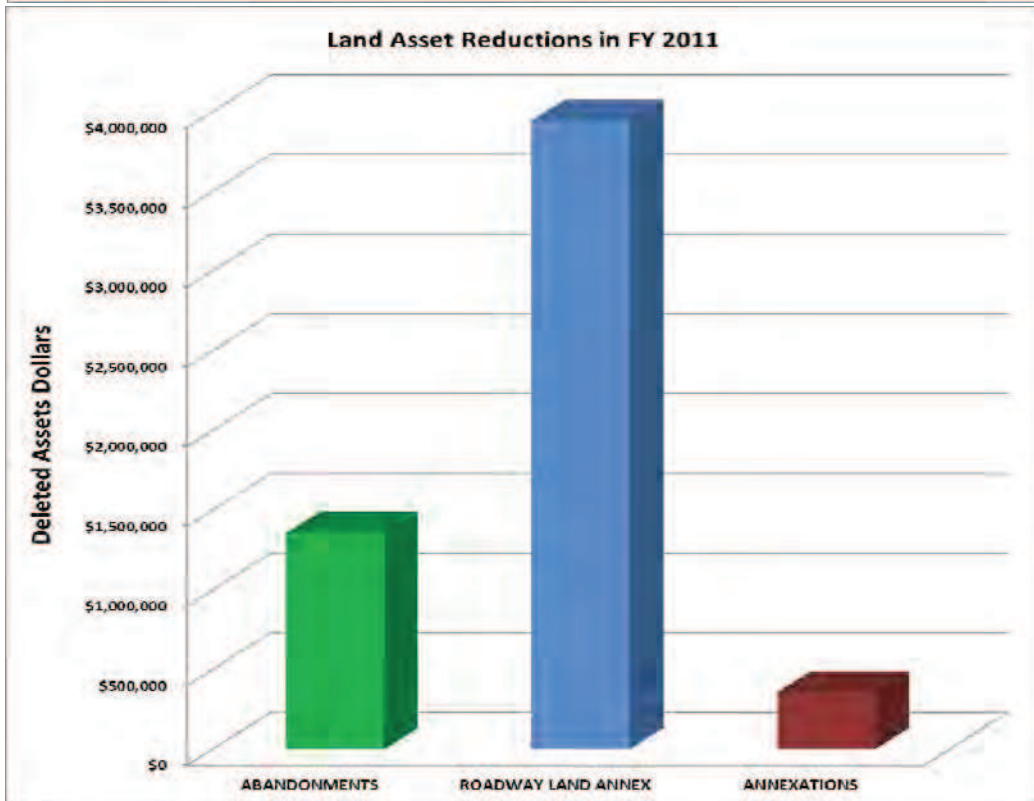
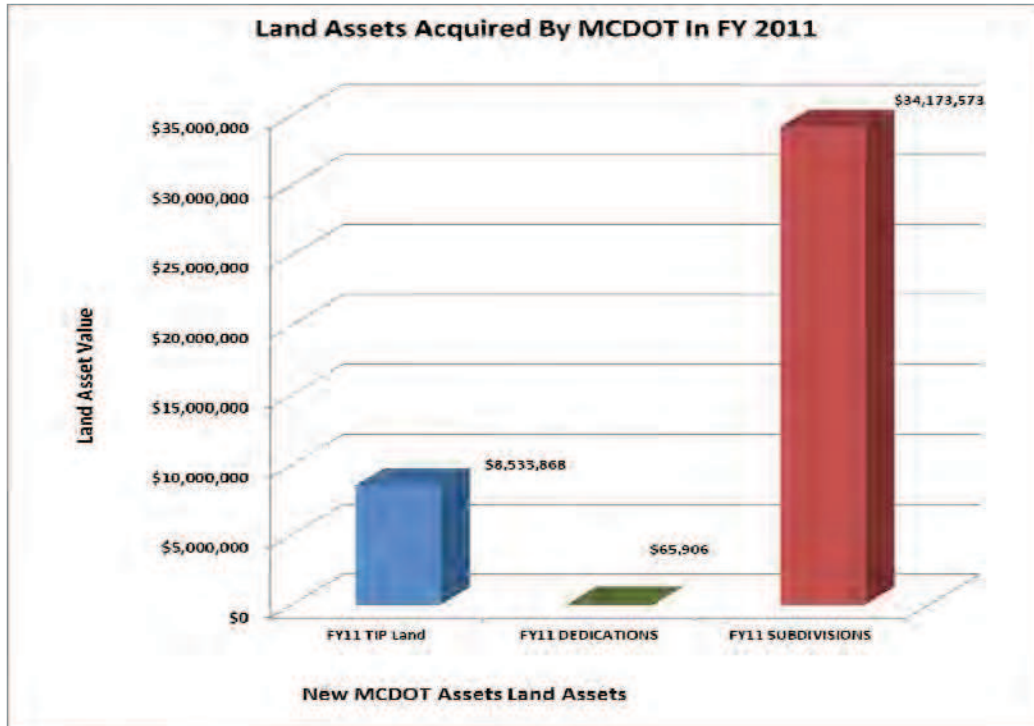
The Roadway Management System (RMS) is the pavement management program MCDOT uses to track and report on the physical attributes and conditions of all MCDOT paved roads. Two methods are used to measure a roadway's condition. The International Roughness Index (IRI) is based on a 1-500 scale. The Pavement Condition Rating (PCR) are on a 1-100 scale. In 2011 81.01% of all roadways were rated Excellent to Good with respect to their PCR while only 0.61% were rated fair to poor. Using the IRI, 17.6% of MCDOT's roadways were rated Smooth to Very Smooth with 44.6% rated rough to very rough.

### Asset Management System

PCR Quality	PCR Range	Miles	Percent
Excellent to Very Good	> 70	901.58	81.01%
Fair to Poor	< 55	6.77	0.61%

The Maricopa County and the Department of Transportation (MCDOT) maintains effective internal controls to manage its infrastructure assets, and to maintain proper records regarding the use and disposition of these assets. This is done to safeguard and maintain MCDOT's assets in order to receive the maximum benefit from these assets and to comply with State and Federal requirements regarding their use and disposition. MCDOT properly accounts each year for its infrastructure assets for financial reporting purposes in accordance with the GASB Statement 34.

MCDOT provides transparency as to how services are provided within the organization and to the County's constituents. It is the intent of the MCDOT Planning Division and Asset Management Team to educate, inform, develop and streamline Asset Management Reporting throughout MCDOT.



# Congestion Management System

**Fiscal Year 2012**



**Programming & System Analysis**



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## **CONGESTION MANAGEMENT SYSTEM OVERVIEW AND BACKGROUND**

### **Purpose of the CMS**

The Maricopa County Congestion Management System (CMS) identifies existing and potential traffic congestion on Maricopa County roads.

The purpose for the CMS is:

1. To identify and measure traffic congestion on Maricopa County roads based on MCDOT's annual traffic count program.
2. To implement the goals in the County's Comprehensive Plan and the Major Streets and Routes Plan.
3. To improve the efficiency and safety of travel on Maricopa County roads.

### **Past MCDOT Congestion Management Efforts**

MCDOT has developed and updated its CMS annually for the past 15 years. The CMS identifies congested roads based on the volume/capacity criteria established in the MCDOT Roadway Design Manual (RDM) (Revised April 2004).

The adopted MCDOT Transportation System Plan (TSP) sets the overall policies, goals, and fundamental considerations for MCDOT decisions concerning current and future transportation needs and investments.

The TSP also recommends investment priorities based on three types of routes; primary, secondary and local. Much of the content of the TSP regarding CMS development and actions are a reflection of the County's Comprehensive Plan guidelines for transportation management.

### **CMS OBJECTIVES**

#### **Objectives Based on the Comprehensive Plan**

The adopted Maricopa County Comprehensive Plan directs the management of MCDOT. The Plan calls for the coordination of development, conservation of natural resources, effective expenditures of public monies, and the promotion of the health, convenience and welfare of the County's citizens. Several objectives related to congestion are set forth in the Comprehensive Plan.

They include:

1. Reducing trips made in single occupancy vehicles.
2. Increasing transit ridership.
3. Employing technology to improve transportation facilities.
4. Identify and accommodate transportation corridors.

5. Optimize public investment.
6. Minimize travel times.

### **Objectives Based on the Transportation System Plan**

The TSP provides guidance to manage the Maricopa County roadway network. The TSP goals set forth a vision for the planning and construction of transportation facilities in the County. The TSP includes several objectives to ease traffic congestion:

1. Roadway widening.
2. Intersection improvements.
3. Alternate route enhancement.
4. Establish parking rules that influence traffic congestion reduction.
5. Improvements to bicycle and pedestrian facilities.
6. Provide for both current and future traffic volume needs.
7. Monitor and measure congestion.
8. Help decide what improvements are needed.
9. Identify alternative actions.
10. Recommend cost-effective mitigation measures.
11. Evaluate actions related to congestion management.

### **CONGESTION EVALUATION PARAMETERS**

#### **MCDOT Roadway Design Manual Definition**

The MCDOT Roadway Design Manual (RDM) (Revised April 2004) uses a combined functional classification and level of service (LOS) system for defining congestion. This provides a measure of congestion and the flexibility to view individual road segments based on their general characteristics and desired operation. To determine whether a segment is congested, a minimum desired LOS is first assigned based on its functional classification (Table 1). Local roads are classified at LOS A, collectors at B and C, and arterials at C and D depending on their urban or rural classification. Roadway capacities are established based on their desired minimum LOS and adjusted for the number of lanes. Their traffic volumes are then divided by their roadway capacities to see if they exceed the desired LOS.

The definition of congestion in the CMS is based on the operation of a roadway and the RDM standards. If traffic volumes exceed the RDM roadway capacity, the road is considered congested.

#### **CMS Performance Measures**

Accurate identification of congestion on roadway segments and intersections is critical to the effective management of the entire network. This CMS identifies road segments where congestion is currently occurring.



MCDOT uses traffic volume to roadway capacity ratios (V/C) because they best identify congestion while satisfying County congestion management needs. These ratios typically use the average number of vehicles (in the most recent year) that travel a road per day divided by the number of vehicles that the road can reasonably handle per day, as per the RDM standards.

### **Area of Consideration**

Geographically, the CMS is applied within the confines of Maricopa County and to roadways that are partially or completely under Maricopa County control. The MCDOT 2011 traffic count program includes counts on many of MCDOT's arterial and collector roadways.

### **CMS ANALYSIS PROCESS**

This report uses the data from the annual 2011 MCDOT traffic count program and previous MCDOT traffic data. There were 1,291 arterial and collector roadway segments that were counted in 2011. Each roadway segment with a 2011 traffic count was compared to its 2007 count value. The absolute ADT increases or decreases were calculated along with each segment's positive or negative change between 2007 and 2011. A roadway volume to capacity ratio was then calculated based on the number of lanes in each segment, the RDM recommended roadway capacity, and each segment's 2011 traffic count. The results are shown in Table 2.

### **FINDINGS AND RECOMMENDATIONS**

The results of the 2011 MCDOT traffic count program are shown on Map 1. All roadway segments with a Volume to Capacity ratio (V/C) greater than 0.75 are shown on Map 2. This means that the 2011 traffic volumes on these roadway segments exceed 75% of the road's vehicle carrying capacity, according to the MCDOT RDM. The RDM criteria shown in Table 1 are very conservative with respect to capacity. This is done to give MCDOT ample warning of potential problems.

A roadway's high V/C ratio may indicate a capacity problem. However, the solution may not be to immediately increase the capacity of the roadway. There may be multiple causes and solutions. For example, not having enough alternative routes parallel to a congested roadway may cause a temporary increase in traffic or a roadway may also be experiencing increased traffic due to construction or closures on alternative routes. Therefore, a thorough analysis of the roadway segments with high V/C ratios is required before there is a determination concerning which ones need immediate attention and which have high ratios due to other unseen or temporary factors. Detailed scoping studies may be necessary to further define solutions to the capacity problems identified in this report.

Table 1: Top 100 Roadway Segments with V/C Ratio > .75

On Road	Dir	Ref Road	V/C Ratio	Diff 2007-2011	ADT 2011	ADT 2010	ADT 2009
103RD AVE	S	BOSWELL BLVD	1.17	1,757	9,918		8,222
103RD AVE	N	GRAND AVE	1.81	-3,847	13,688	15,023	16,999
103RD AVE	N	SANTA FE DR	1.11	-1,836	9,402	10,801	7,983
103RD AVE	N	THUNDERBIRD BLVD	0.83	-1,029	7,033	8,966	8,342
107TH AVE	S	GRAND AVE	1.21	-591	10,318	12,322	
107TH AVE	N	MC 85	1.58		13,399	11,368	11,841
107TH AVE	S	MC 85	1.37		11,877	9,624	9,081
107TH AVE	N	UNION HILLS DR	0.77	245	6,523	6,435	5,808
111TH AVE	N	ELK AVE	1.20	-2,903	10,205	11,435	9,765
111TH AVE	N	OLIVE AVE	0.75	-866	6,407	6,660	8,389
111TH AVE	S	PEORIA AVE	0.90	-211	7,627	8,876	6,651
111TH AVE	S	THUNDERBIRD BLVD	1.96	2,239	16,698	14,703	10,447
135TH AVE	S	DEER VALLEY DR	1.15	-2,499	9,783	10,607	10,067
135TH AVE	N	MEEKER BLVD	1.17	-38	9,916	6,885	9,484
151ST AVE	S	DEER VALLEY DR	1.02	602	8,835	6,119	8,582
151ST AVE	N	R H JOHNSON BLVD	1.07	-3,424	9,097	9,779	11,358
195TH AVE	S	I-10	0.88	-8,440	7,456	3,202	8,297
51ST AVE	S	PECOS RD	0.90	-3,105	7,814	6,940	8,546
51ST AVE	S	ST JOHNS RD	0.95	-2,667	8,082	6,911	8,022
67TH AVE	N	BASELINE RD	1.09	-1,229	9,250	11,333	10,891
67TH AVE	N	BROADWAY RD	1.34	-1,856	11,388	10,827	9,886
67TH AVE	S	BROADWAY RD	1.83	-5,413	15,529	13,425	13,092
7TH ST	N	CAREFREE HWY	1.01	-525	8,619	8,706	8,559
83RD AVE	S	PINNACLE PEAK RD	1.58	-10,219	13,451		18,777
BASELINE RD	E	67TH AVE	1.86	-4,162	15,776	20,488	16,145
BASELINE RD	W	67TH AVE	0.93	-2,535	7,923	8,076	7,750
BASELINE RD	E	APACHE RD	0.77	-1,284	6,519		6,614
BOSWELL BLVD	S	BELL RD	0.83	1,434	7,015	7,182	7,209
BROADWAY RD	E	35TH AVE	1.36		11,526		
BROADWAY RD	W	51ST AVE	0.97	-1,114	8,249	8,623	6,793
BROADWAY RD	E	67TH AVE	1.21	4,408	10,317	6,199	6,294
BROADWAY RD	E	75TH AVE	1.25	1,490	10,649	8,763	11,496
BROADWAY RD	E	83RD AVE	0.85	-248	7,262	6,411	7,185
BROADWAY RD	E	91ST AVE	0.86	1,266	7,350	6,041	5,220
CAMELBACK RD	E	ALSUP AVE	1.32	660	11,186	9,272	8,741
CAMELBACK RD	E	BULLARD AVE	1.04	-932	8,826	8,989	9,009
CAMINO DEL SOL	S	MEEKER BLVD	1.09	-2,313	9,229	9,734	9,541
CAMINO DEL SOL	N	R H JOHNSON BLVD	0.81	-4,176	6,867	10,357	11,115
CAMINO DEL SOL	S	R H JOHNSON BLVD	1.35	-3,106	11,497	11,922	10,716
CHANDLER HEIGHTS	E	COOPER RD	0.98	-1,123	8,357	10,976	12,109
COTTON LN	N	OLIVE AVE	0.87	155	7,408	8,333	6,044
DEER VALLEY DR	E	135TH AVE	0.85	-502	7,210	6,202	6,075
DEER VALLEY DR	W	135TH AVE	1.12	481	9,503	8,361	7,772
DYNAMITE BLVD	W	56TH ST	1.07	-3,278	9,100	10,280	9,792
EL MIRAGE RD	N	BETHANY HOME RD	1.14	65	9,680	7,990	7,449
EL MIRAGE RD	N	CAMELBACK RD	1.09	-853	9,267	9,153	9,549
EL MIRAGE RD	N	GLENDALE AVE	0.90	-1,342	7,650	7,358	7,490
ELLIOT RD	W	SOSSAMAN RD	1.06	2,094	8,969	7,268	6,629
GRANITE VALLEY DR	W	MEEKER BLVD	1.34	-5,441	11,388	17,256	16,434
GREENWAY RD	E	99TH AVE	0.80	635	6,767	6,801	7,849
HUNT HWY	W	SOSSAMAN RD	0.94	-6,419	7,997	9,171	9,059
INDIAN SCHOOL RD	E	107TH AVE	0.76	-4,232	26,617	28,188	30,103
LINDSAY RD	N	RIGGS RD	0.76	2,139	6,425	5,269	
LITCHFIELD RD	N	NORTHERN AVE	1.67	-2,823	14,162	14,397	15,797

**Table 1: Top 100 Roadway Segments with V/C Ratio > .75 (cont)**

On Road	Dir	Ref Road	V/C Ratio	Diff 2007-2011	ADT 2011	ADT 2010	ADT 2009
LITCHFIELD RD	N	OLIVE AVE	1.98	-1,932	16,815	18,369	20,771
LONE MOUNTAIN RD	E	48TH ST	0.80	-3,831	6,768	7,659	9,544
MC 85	W	COTTON LN	0.89		7,574	9,370	9,501
MC 85	W	ESTRELLA PKWY	1.02		8,682	8,883	11,241
MC 85	E	JACKRABBIT TL	0.93	-3,441	7,991	8,600	9,170
MC 85	W	JACKRABBIT TL	0.79	-3,138	6,678	7,325	8,279
MC 85	E	RAINBOW RD	0.84	-3,025	7,152	7,504	7,754
MC 85	W	SOUTHERN AVE	0.87	-2,691	7,392	8,240	9,300
MERIDIAN RD	N	BROADWAY RD	0.94	-4,528	8,011	10,837	11,974
MERIDIAN RD	N	SOUTHERN AVE	0.85	-1,261	7,267	7,320	7,515
MILLER RD	S	BASELINE RD	0.97	-2,057	8,221	8,580	9,236
NORTHERN AVE	E	LITCHFIELD RD	1.41	260	12,022	12,578	11,970
NORTHERN AVE	E	REEMS RD	1.41	-68	11,985	12,651	12,184
OCOTILLO RD	W	MERIDIAN RD	2.06		17,473	17,963	
OLIVE AVE	W	103RD AVE	1.01	-5,155	35,175	39,977	36,748
OLIVE AVE	E	109TH AVE	0.88	-6,661	30,746	35,045	33,046
OLIVE AVE	E	114TH AVE	0.89	-10,008	31,110	29,980	33,357
OLIVE AVE	E	99TH AVE	0.98	-4,615	34,469	34,589	36,064
OLIVE AVE	W	99TH AVE	1.05	-4,606	36,708	37,595	37,576
OLIVE AVE	E	CITRUS RD	0.87	1,571	7,392	6,094	7,029
OLIVE AVE	E	EL MIRAGE RD	0.78	-2,721	27,141	29,721	28,851
OLIVE AVE	W	LITCHFIELD RD	0.91	-2,403	7,899	9,888	8,337
OLIVE AVE	E	LITCHFIELD RD	1.44	-4,298	12,268	15,648	14,869
OLIVE AVE	E	REEMS RD	0.90	-1,794	7,840	9,600	9,349
PEORIA AVE	E	BULLARD AVE	0.77	-942	6,532	7,073	8,455
POWER RD	N	RAY RD	0.96	-8,174	29,995	36,650	30,634
POWER RD	S	RIGGS RD	0.81	-2,469	6,904	7,876	7,661
REEMS RD	N	OLIVE AVE	0.94	158	7,999	8,867	7,887
RIGGS RD	W	MARICOPA RD	0.82	-4,385	6,972	5,952	6,980
RIGGS RD	E	POWER RD	0.80	-2,823	6,760	7,675	6,132
RIGGS RD	E	RECKER RD	0.96	-1,240	8,145	8,633	7,844
RIGGS RD	E	RITTENHOUSE RD	1.18	-834	10,047	18,862	9,497
RITTENHOUSE RD	N	CLOUD RD	2.29	5,778	19,507	20,376	20,491
RITTENHOUSE RD	N	RIGGS RD	2.66	-2,764	22,598	25,720	29,611
SOUTHERN AVE	E	43RD AVE	1.71	4,024	14,525		8,064
SOUTHERN AVE	E	51ST AVE	1.96	2,807	16,696	12,929	12,621
SOUTHERN AVE	E	98TH ST	1.63	-953	13,814	10,813	13,317
SOUTHERN AVE	E	CRISMON RD	1.60	111	13,563	16,649	13,929
SOUTHERN AVE	W	ELLSWORTH RD	1.65	4,814	14,059	3,739	7,870
SOUTHERN AVE	W	ELLSWORTH RD	1.65	6,286	14,059	6,607	6,922
SOUTHERN AVE	E	SIGNAL BUTTE RD	1.56	490	13,220	9,571	9,515
THUNDERBIRD BLVD	E	99TH AVE	0.75	-2,772	26,272	28,482	
UNION HILLS DR	E	107TH AVE	1.51	-3,166	12,853	18,272	16,978
UNION HILLS DR	W	107TH AVE	1.42	-858	12,040	11,641	12,560
VAL VISTA DR	N	CHANDLER HEIGHTS RD	1.50	604	12,752	10,642	9,294
WATSON RD	N	MAGNOLIA ST	1.67	1,638	14,161	15,132	19,676

**Table 2: Top 100 Roadway Segments With The Greatest 5 Yr ADT Increase**

On Road	Dirct	Ref Road	Diff 2007-2011	ADT 2011	ADT 2010	ADT 2009	ADT 2008	ADT 2007
RITTENHOUSE RD	N	CLOUD RD	5,778	19,507	20,376	20,491	23,141	13,729
BROADWAY RD	W	ELLSWORTH RD	4,574	17,604	18,292	19,772	16,387	13,030
BROADWAY RD	E	57TH AVE	4,408	10,317	6,199	6,294	4,997	5,909
SOUTHERN AVE	E	43RD AVE	4,024	14,525		8,064	12,070	10,501
PEORIA AVE	E	99TH AVE	3,584	24,298	23,560	19,443	18,962	20,714
BROADWAY RD	E	ELLSWORTH RD	3,107	16,654	16,405	14,927	15,764	13,547
SOUTHERN AVE	E	51ST AVE	2,807	16,696	12,929	12,621	8,153	13,889
DYSART RD	N	CAMELBACK RD	2,616	24,426	21,658	24,145	25,145	21,810
MCDOWELL RD	E	92ND ST	2,454	11,622	9,626	9,803	10,613	9,168
BROWN RD	E	96TH ST	2,374	7,795	8,075	8,578	7,359	5,421
111TH AVE	S	THUNDERBIRD BLVD	2,239	16,698	14,703	10,447	11,787	14,459
LINDSAY RD	N	RIGGS RD	2,139	6,425	5,269		4,495	4,286
ELLIOT RD	W	SOSSAMAN RD	2,094	8,969	7,268	6,629	7,029	6,875
BOSWELL BLVD	N	THUNDERBIRD BLVD	1,789	6,117	3,256		4,593	4,328
103RD AVE	S	BOSWELL BLVD	1,757	9,918		8,222	7,400	8,161
WATSON RD	N	MAGNOLIA ST	1,638	14,161	15,132	19,676	12,315	12,523
OLIVE AVE	E	CITRUS RD	1,571	7,392	9,094	7,029	8,806	5,821
PEORIA AVE	E	SARIVAL AVE	1,566	2,973	2,160	1,748	1,823	1,407
R H JOHNSON BLVD	E	CAMINO DEL SOL	1,535	9,750	9,667	8,901	9,359	8,215
BROADWAY RD	E	75TH AVE	1,490	10,649	8,763	11,496	10,830	9,159
BOSWELL BLVD	S	BELL RD	1,434	7,015	7,182	7,209	6,382	5,581
103RD AVE	N	BOSWELL BLVD	1,409	6,266		7,785	5,493	4,857
339TH AVE	S	BROADWAY RD	1,387	2,451	1,090	910	1,012	1,064
BROADWAY RD	E	91ST AVE	1,266	7,350	6,041	5,220	6,279	6,084
R H JOHNSON BLVD	N	BELL RD	1,261	13,275	14,035	11,788	12,163	12,014
COTTON LN	N	WADDELL RD (1/4 mile)	1,218	8,371	7,585	5,303	8,363	7,153
99TH AVE	N	BELL RD	1,217	7,839	7,204	7,181	7,396	6,622
YUMA RD	E	JACKRABBIT TL	1,200	3,416	3,971	3,717	3,704	2,216
PAINTED ROCK DAM RD	N	I 8	1,126	1,460	311	348	370	334
GERMANN RD	E	SR 87	1,054	10,253	9,893	8,936	12,420	9,199
BASELINE RD	E	PALO VERDE RD	1,053	4,138	2,947	2,810	3,235	3,085
99TH AVE	N	BELL RD	1,022	8,375	8,586	8,123	7,639	7,353
ELLSWORTH RD	N	BROADWAY RD	1,021	13,946	12,797	11,731	15,258	12,925
HERITAGE DR	N	STARDUST BLVD	954	3,954	3,582	3,194	3,170	3,000
BASELINE RD	W	OGLESBY RD	906	4,710	3,469	3,501	4,516	3,804
BASELINE RD	E	331ST AVE	868	3,480	2,913	2,662	2,501	2,612
BURNS DR	S	BELL RD	805	5,848	6,269	4,866	4,396	5,043
HAWES RD	N	EMPIRE BLVD	761	1,647	1,880	1,337	1,207	886
MOUNTAIN RD	N	UNIVERSITY DR	746	1,886	1,867	1,925	1,828	1,140
ELLIOT RD	W	383RD AVE	730	1,009	248	271	265	279
AIRPORT RD	N	BROADWAY RD	724	1,188	1,008	859	821	464
ELLIOT RD	E	ELLSWORTH RD	709	11,170			12,252	10,461
ALEPPO DR	S	R H JOHNSON BLVD	700	3,716	3,569	2,496	3,053	3,016
CAMELBACK RD	E	ALSUP AVE	660	11,186	9,272	8,741	12,782	10,526
27TH AVE	S	DESERT HILLS DR	660	2,346	1,857	2,478	2,180	1,686
POWER RD	N	WILLIAMS FIELD RD	658	13,919	15,990	16,510		13,261
BOSWELL BLVD	N	KINGSWOOD CIR	652	4,927	3,788	5,206	4,952	4,275
DEER VALLEY DR	W	151ST AVE	651	2,518	1,670	1,776	1,769	1,867
NORTHERN AVE	E	CITRUS RD	636	2,464	3,061	2,556	2,400	1,828
GREENWAY RD	E	99TH AVE	635	6,767	6,801	7,849	7,082	6,132
VAL VISTA DR	N	CHANDLER HEIGHTS RD	604	12,752	10,642	9,294	12,181	12,148
151ST AVE	S	DEER VALLEY DR	602	8,635	6,119	8,582	8,658	8,033
DEL WEBB BLVD	N	SANTA FE DR	584	7,351	6,316	7,026	6,154	6,767
UNIVERSITY DR	W	MERIDIAN RD	572	12,886	10,295	13,331	13,586	12,314

**Table 2: Top 100 Roadway Segments With The Greatest 5 Yr. ADT Increase**

On Road	Dir	Ref Road	Diff 2007-2011	ADT 2011	ADT 2010	ADT 2009	ADT 2008	ADT 2007
107TH AVE	N	CHERRY HILLS DR (N)	569	3,820	3,554	3,339	3,214	3,251
PALMERAS DR	N	LINDGREN AVE	537	2,359	2,299	2,263	1,740	1,822
DOBBINS RD	E	355TH AVE	530	1,081	759	748	597	551
24TH ST	N	CAREFREE HWY	507	2,785	2,854	2,630	2,757	2,278
DESERT HILLS DR	E	27TH AVE	504	2,225	2,021	2,114	2,099	1,721
24TH ST	N	CLOUD RD	499	2,731	1,711	2,281	2,347	2,232
BOSWELL BLVD	W	107TH AVE	497	1,505	977	1,114	1,266	1,008
SOUTHERN AVE	E	SIGNAL BUTTE RD	490	13,220	9,571	9,515	13,219	12,730
383RD AVE	N	ELLIOT RD	482	1,117	740	840	491	635
DEER VALLEY DR	W	135TH AVE	481	9,503	8,361	7,772	8,574	9,022
RAINBOW RD	N	BROADWAY RD	466	1,993	2,218	4,622	2,644	1,527
R H JOHNSON BLVD	N	BELL RD	464	11,875	13,432	11,892	11,820	11,411
DEL WEBB BLVD	S	HUTTON DR	464	8,432	7,302	7,016	7,526	7,968
CIRCLE MOUNTAIN RD	E	NEW RIVER RD	463	4,466	3,464	3,753	3,748	4,003
FORT MCDOWELL RD	N	SR 87	450	5,472	5,637	4,040	4,958	5,022
JOY RANCH RD	E	7TH AVE	441	1,356	1,306	1,258	1,179	915
331TH AVE	S	BASELINE RD	439	1,117	885	796	672	678
BOSWELL BLVD	E	99TH AVE	437	2,966	2,588	1,865	2,862	2,529
PALO VERDE RD	S	BASELINE RD	427	1,090	1,023	873	912	663
DEER VALLEY DR	E	TOM RYAN DR	424	4,738	5,218	5,245	5,811	4,314
BURNS DR	W	99TH AVE	421	3,127	1,859	2,091	1,702	2,706
BEARDSLEY RD	E	107TH AVE	420	7,160	4,306	3,839	5,578	6,740
JOY RANCH RD	E	16TH ST	418	1,557	1,434	1,145	1,315	1,139
107TH AVE	N	CHERRY HILLS DR (N)	397	3,832	3,820	3,938	3,392	3,435
YUMA RD	E	MILLER RD	353	5,747	5,311	6,946		5,394
R H JOHNSON BLVD	E	CAMINO DEL SOL	339	8,893	9,578	9,194	9,891	8,554
DAISY MOUNTAIN DR	E	MERIDIAN DR	311	4,108	4,511	5,145	4,560	3,797
GAVILAN PEAK PKWY	N	MEMORIAL DR	305	4,843	5,942	4,438	5,921	4,538
DAISY MOUNTAIN DR	E	MERIDIAN DR	301	4,300	6,661	4,022	5,636	3,999
DEL WEBB BLVD	N	SANTA FE DR	297	7,377	6,988	7,432	6,881	7,080
BETHANY HOME RD	W	EL MIRAGE RD	296	2,643	2,493	2,646	2,295	2,347
USERY PASS RD	S	BUSH HWY	291	2,199	2,313	2,169	1,742	1,908
JACKRABBIT TL	N	THOMAS RD	272	4,534		5,252	5,087	4,262
GAVILAN PEAK PKWY	N	MEMORIAL DR	270	4,856	5,177	4,274	4,962	4,586
PEORIA AVE	E	LITCHFIELD RD	266	3,979	4,339	4,815		3,713
DEL WEBB BLVD	S	THUNDERBIRD BLVD (N)	265	7,345	5,845	7,432	6,881	7,080
NORTHERN AVE	E	LITCHFIELD RD	260	12,022	12,578	11,970	11,152	11,762
MOHAVE RD	W	FORT MCDOWELL RD	248	2,021	2,576	1,581	1,614	1,773
107TH AVE	N	UNION HILLS DR	245	6,523	6,435	5,808	6,965	6,278
BEARDSLEY RD	E	CAMINO DEL SOL	241	4,907	4,343	5,931	4,953	4,666
MERIDIAN DR	S	DAISY MOUNTAIN DR	233	3,475	4,102	4,622	3,019	3,242
BASELINE RD	E	JOHNSON RD	230	2,737	2,462	2,494	2,585	2,507
99TH AVE	N	OLIVE AVE	219	3,573	3,629	3,468	3,263	3,354
99TH AVE	S	PEORIA AVE	215	4,256	4,275	4,117	3,961	4,041
CAMEO DR	W	103RD AVE	203	1,111	1,652	930	1,234	908
BOSWELL BLVD	E	103RD AVE	197	3,161		3,091	2,896	2,964

**Table 3: Top 100 Roadway Segments With The Greatest 5 Yr. ADT Decrease**

On Road	Direction	Ref Road	Diff 2007-2011	ADT 2011	ADT 2010	ADT 2009	ADT 2008	ADT 2007
POWER RD	N	QUEEN CREEK RD	-13,894	18,466	27,192	23,404		32,360
MCDOWELL RD	E	HAWES RD	-12,908	3,701	3,426		11,624	16,609
UNION HILLS DR	E	99TH AVE	-10,336	15,976	17,937	17,214	21,620	26,312
UNION HILLS DR	E	WESTBROOK PKWY	-10,282	19,069	21,649	21,276	22,986	29,351
83RD AVE	S	PINNACLE PEAK RD	-10,219	13,451		18,777	16,123	23,670
OLIVE AVE	E	114TH AVE	-10,008	31,110	29,980	33,357	39,632	41,118
MCDOWELL RD	E	78TH ST	-9,079	4,645	4,380		12,170	13,724
MCKELLIPS RD	W	CRISMON RD	-8,991	2,185	2,443		7,595	11,176
RIGGS RD	E	SR 87	-8,981	19,917	26,292		26,192	28,898
ELLSWORTH RD	N	APACHE TL	-8,973	10,587	11,399	11,606	13,630	19,560
ELLSWORTH RD	N	SOUTHERN AVE	-8,570	9,079	10,052	9,507	10,828	17,649
195TH AVE	S	I-10	-8,440	7,456	3,202	8,297	8,404	15,896
POWER RD	N	RAY RD	-8,174	29,995	36,650	30,634		38,169
JACKRABBIT TL	N	YUMA RD	-7,793	4,783	6,264	6,060	6,320	12,576
PINNACLE PEAK RD	W	83RD AVE	-7,529	3,385		8,974		10,914
PINNACLE PEAK RD	E	99TH AVE	-7,492	2,256		5,746	5,409	9,748
RECKER RD	S	UNIVERSITY DR	-7,417	8,842	10,601	11,023	14,504	16,259
ALMA SCHOOL RD	N	MCLELLAN RD	-6,955	25,449	23,556		30,985	32,404
CRISMON RD	N	BROWN RD	-6,674	2,481	2,883		8,218	9,155
OLIVE AVE	E	109TH AVE	-6,661	30,746	35,045	33,046	39,944	37,407
MCKELLIPS RD	E	PIMA RD	-6,580	16,692	15,004	23,193	18,259	23,272
HUNT HWY	W	SOSSAMAN RD	-6,419	7,997	9,171	9,059	11,668	14,416
MC 85	E	ESTRELLA PKWY	-6,002	6,020	8,924	10,224	7,822	12,022
MC 85	E	BULLARD AVE	-5,986	6,339	8,769	8,088	11,700	12,325
RIGGS RD	E	SUN LAKES BLVD	-5,911	14,622	16,396	17,098	19,534	20,533
MEEKER BLVD	N	GRAND AVE	-5,881	12,482	12,005	12,243	14,843	18,363
ELLSWORTH RD	N	SOUTHERN AVE	-5,823	8,786	13,589	9,428	9,862	14,609
CAREFREE HWY	E	32ND ST	-5,731	15,482	16,659	19,025	18,824	21,213
POWER RD	N	GUADALUPE RD	-5,476	27,782	37,809	28,536		33,258
MEEKER BLVD	N	R H JOHNSON BLVD	-5,455	11,569	15,000	13,853	15,123	17,024
GRANITE VALLEY DR	W	MEEKER BLVD	-5,441	11,388	17,256	16,434	14,810	16,829
67TH AVE	S	BROADWAY RD	-5,413	15,529	13,425	13,092		20,942
ELLSWORTH RD	N	UNIVERSITY DR	-5,369	11,486	11,278	10,948	19,650	16,855
OLIVE AVE	W	103RD AVE	-5,155	35,175	38,977	36,748	43,281	40,330
RIGGS RD	E	COOPER RD	-5,134	15,869	19,659	14,170	21,561	21,003
99TH AVE	N	UNION HILLS DR	-5,040	6,049	8,278	7,715	7,397	11,089
CAREFREE HWY	E	7TH ST	-4,783	14,621	14,324	17,229	17,452	19,404
POWER RD	N	ELLIOT RD	-4,668	21,702	28,449	20,478		26,370
OLIVE AVE	E	99TH AVE	-4,615	34,469	34,589	36,064	40,705	39,084
OLIVE AVE	W	99TH AVE	-4,606	36,708	37,595	37,576	43,026	41,314
99TH AVE	S	BEARDSLEY RD	-4,567	12,256	13,043	12,514	15,035	16,823
MERIDIAN RD	N	BROADWAY RD	-4,528	8,011	10,837	11,874	11,802	12,539
GILBERT RD	S	WILLIAMS FIELD RD	-4,483	22,503	25,648	22,568		26,986
CRISMON RD	N	UNIVERSITY DR	-4,457	3,725	6,598	4,347	7,882	8,182
DAISY MOUNTAIN DR	E	I-17 FRONTAGE RD	-4,449	8,285	8,935	10,644	11,271	12,734
RIGGS RD	W	MARICOPA RD	-4,385	6,972	5,952	6,980	10,099	11,357
RIGGS RD	E	HAWES RD	-4,308	4,305	7,174	5,469	5,833	8,613
MCKELLIPS RD	E	ALMA SCHOOL RD	-4,308	11,170	8,585	12,522	11,723	15,478
OLIVE AVE	E	LITCHFIELD RD	-4,298	12,268	15,648	14,669	15,702	16,566
BASELINE RD	W	83RD AVE	-4,293	4,135	3,787	4,450	4,403	8,428
UNIVERSITY DR	E	HIGLEY RD	-4,254	14,465	16,458	18,362	21,100	18,719
INDIAN SCHOOL RD	E	107TH AVE	-4,232	26,617	28,188	30,103		30,849
99TH AVE	N	BOSWELL BLVD	-4,224	16,737	16,681	17,673	19,184	20,961
GILBERT RD	N	GERMANN RD	-4,187	37,685	33,354			41,872

**Table 3: Top 100 Roadway Segments With The Greatest 5 Yr. ADT Decrease (cont.)**

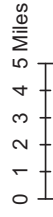
On Road	Direction	Ref Road	Diff 2007-2011	ADT 2011	ADT 2010	ADT 2009	ADT 2008	ADT 2007
CAMINO DEL SOL	N	R H JOHNSON BLVD	-4,176	6,867	10,357	11,115	9,906	11,043
BASELINE RD	E	67TH AVE	-4,162	15,776	20,488	16,145	15,570	19,938
THUNDERBIRD BLVD	W	99TH AVE	-4,156	20,441	26,132	14,129	21,187	24,597
THUNDERBIRD BLVD	W	108TH DR	-4,154	6,083	8,991	6,952	9,420	10,237
RIGGS RD	E	EJ ROBSON BLVD	-4,048	21,167	23,819	20,990	23,420	25,215
INDIAN SCHOOL RD	E	EL MIRAGE RD	-3,936	22,114	22,341	22,429	22,284	26,050
103RD AVE	N	GRAND AVE	-3,847	13,686	15,023	16,999	17,958	17,533
LONE MOUNTAIN RD	E	48TH ST	-3,831	6,768	7,659	9,544	8,045	10,599
91ST AVE	N	BASELINE RD	-3,804	3,702	3,503	4,088	4,037	7,506
JACKRABBIT TL	N	LOWER BUCKEYE RD	-3,772	3,263	3,337	4,173	3,712	7,035
99TH AVE	S	BOSWELL BLVD	-3,512	16,901	17,060	18,991	19,568	20,413
MC 85	E	JACKRABBIT TL	-3,441	7,891	8,600	9,170	10,236	11,332
151ST AVE	N	R H JOHNSON BLVD	-3,424	9,097	9,779	11,358	12,990	12,521
MC 85	E	ESTRELLA PKWY	-3,407	6,129	6,453	8,040	9,027	9,536
MC 85	E	BULLARD AVE	-3,399	6,423	6,745	7,578	12,078	9,822
SIGNAL BUTTE RD	N	BROADWAY RD	-3,360	17,407	15,432	14,972	16,718	20,767
DYNAMITE BLVD	W	56TH ST	-3,278	9,100	10,280	9,792	12,647	12,378
MCDOWELL RD	E	LONGMORE RD	-3,189	12,507	15,572	15,656	17,990	15,696
UNION HILLS DR	E	107TH AVE	-3,166	12,853	18,272	18,978	15,903	16,019
VULTURE MINE RD	N	US 60	-3,161	442			3,526	3,603
MC 85	W	JACKRABBIT TL	-3,138	6,678	7,325	8,279	6,756	9,816
MCKELLIPS RD	E	HAYDEN RD	-3,119	18,666	18,518	17,607	20,717	21,785
CAMINO DEL SOL	S	R H JOHNSON BLVD	-3,106	11,497	11,922	10,716	14,596	14,603
51ST AVE	S	PECOS RD	-3,105	7,614	6,940	8,546	8,240	10,719
MCKELLIPS RD	W	ALMA SCHOOL RD	-3,036	11,541	10,543	12,554	13,292	14,577
MERIDIAN RD	N	APACHE TL	-3,035	8,236	8,812	8,981	9,159	11,271
MC 85	E	RAINBOW RD	-3,025	7,152	7,504	7,754	9,166	10,177
RIGGS RD	E	MARICOPA RD	-3,006	5,186	4,907	5,468	7,701	8,192
HUNT HWY	E	LEMON AVE	-2,993	5,903	6,656	6,905	7,843	8,896
99TH AVE	N	UNION HILLS DR	-2,925	6,062	6,782	6,490	7,892	8,987
111TH AVE	N	ELK AVE	-2,903	10,205	11,435	9,765	11,629	13,108
43RD AVE	N	SOUTHERN AVE	-2,885	5,516			7,701	8,401
RIGGS RD	E	SOSSAMAN RD	-2,878	5,645	6,264	5,695		8,523
ALMA SCHOOL RD	N	MCKELLIPS RD	-2,857	7,572	6,527	7,993	9,669	10,429
ANTHEM WAY	E	GAVILAN PEAK PKW	-2,846	6,730	7,845	6,501	6,777	9,576
RIGGS RD	E	POWER RD	-2,823	6,760	7,675	6,132	8,297	9,583
111TH AVE	N	GRAND AVE	-2,793	13,277	11,337	11,074	15,991	16,070
RIGGS RD	E	ALMA SCHOOL RD	-2,786	16,632	17,485		19,220	19,418
HUNT HWY	E	ALMA SCHOOL RD	-2,780	1,793	3,229	4,733	4,025	4,573
THUNDERBIRD BLVD	E	99TH AVE	-2,772	26,272	28,482		28,584	29,044
BOSWELL BLVD	N	BURNS DR	-2,770	4,543	5,522	5,037	5,465	7,313
RITTENHOUSE RD	N	RIGGS RD	-2,764	22,598	25,720	29,611	26,518	25,362
CAMELBACK RD	E	EL MIRAGE RD	-2,738	20,083	20,553	20,114	21,118	22,821
OLIVE AVE	E	EL MIRAGE RD	-2,721	27,141	29,721	28,851	29,410	29,862
UNIVERSITY DR	E	SIGNAL BUTTE RD	-2,714	13,422	16,015	16,652	16,162	16,136
MC 85	W	SOUTHERN AVE	-2,691	7,392	8,240	9,300	10,596	10,083

Map 1

# TOP 100 AVERAGE DAILY TRAFFIC COUNTS FY 2011

- 6,407 - 8,604 vehicles
- 8,605 - 15,463 vehicles
- 15,464 - 22,322 vehicles
- 22,323 - 29,181 vehicles
- 29,182 - 36,708 vehicles

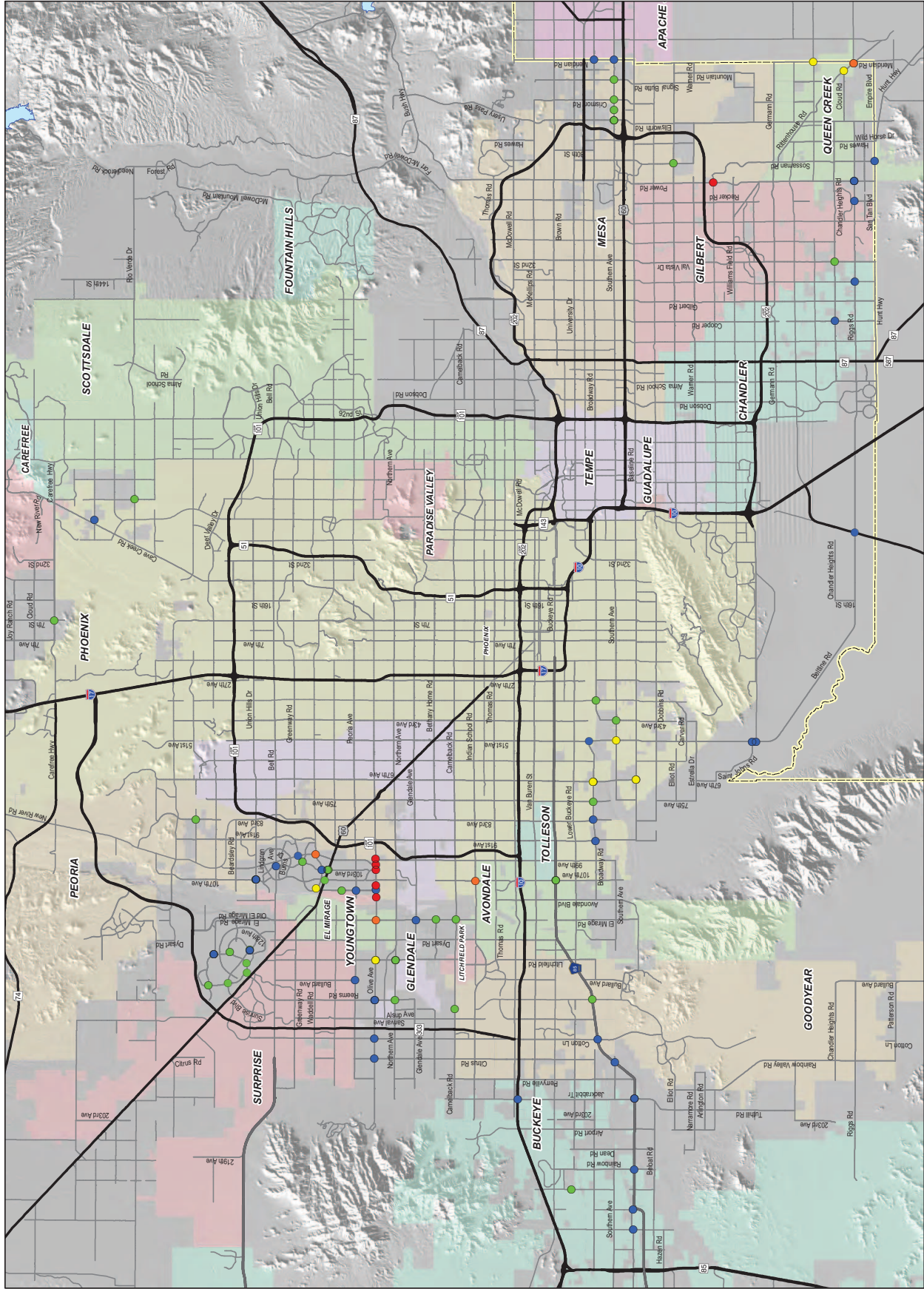
- State Highways
- Arterials
- Maricopa County



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May 15, 2012

CMS 10

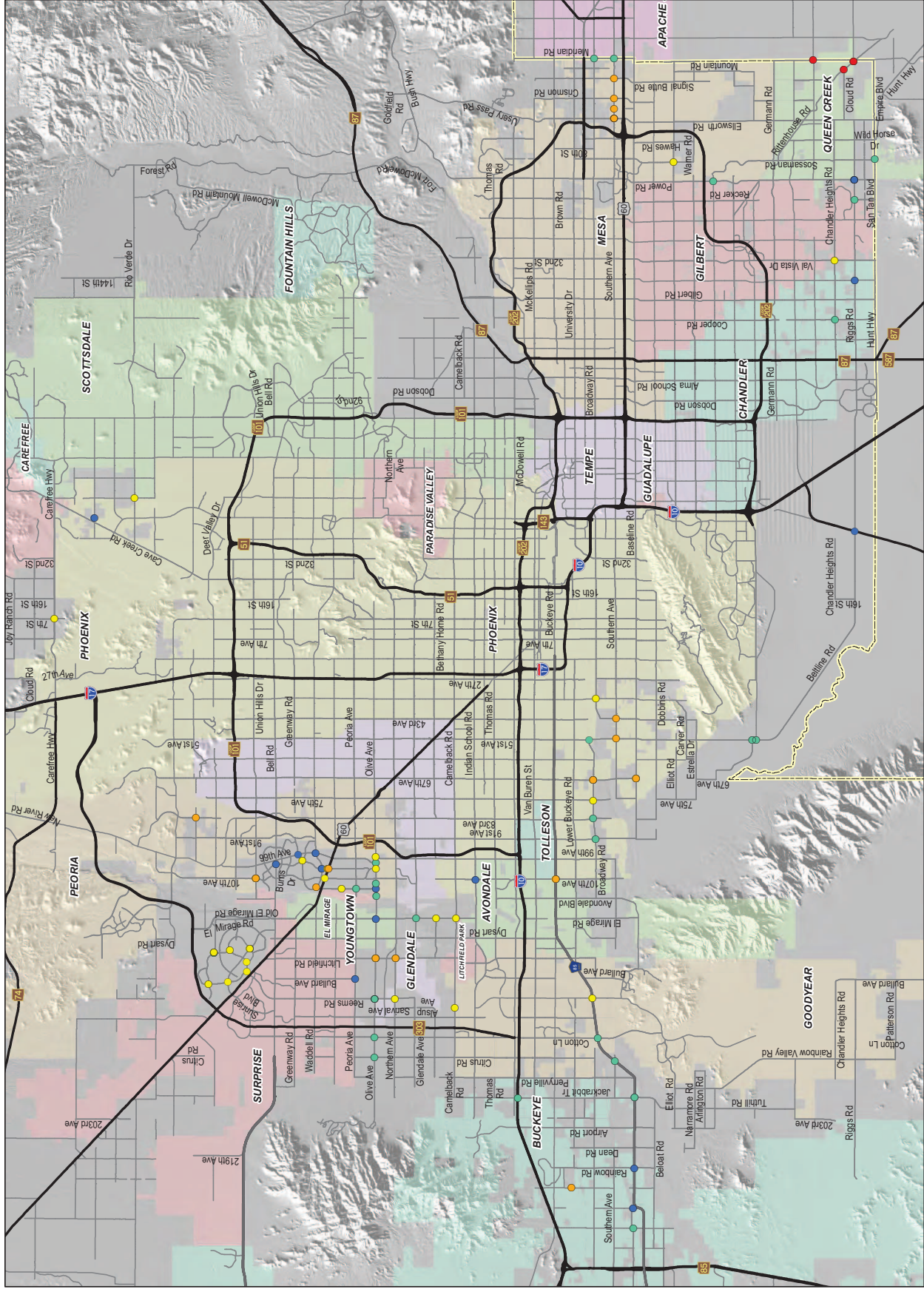
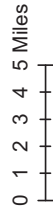




# CONGESTION V/C RATIO FY 2011

- CONGESTION**
- 0.75 - 0.85
  - 0.851 - 1
  - 1.01 - 1.5
  - 1.51 - 2
  - 2.01 - 2.66

- State Highways
- Arterials
- Maricopa County



# Safety Management System

**Fiscal Year 2012**



**Programming & System Analysis**



**[www.maricopa.gov](http://www.maricopa.gov)**

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## **SAFETY MANAGEMENT SYSTEM OVERVIEW AND BACKGROUND**

### **PURPOSE OF THE SAFETY MANAGEMENT SYSTEM**

The County Safety Management System (SMS) is a systematic process that has three goals:

- Document the roadway safety improvements made by Maricopa County during the previous fiscal year.
- Identify the location, type, and severity of traffic crashes in the unincorporated portions of Maricopa County.
- Report trends in traffic crashes and recommend improvements to reduce the number and rate of crashes.

### **MCDOT Safety Management Procedures**

MCDOT makes every effort to respond quickly to identified safety problems. These problems are frequently identified through public complaints about unsafe roadway conditions, first-hand observation by County staff members, and by reviewing recent crash records for County roadways. When an actual problem or potential problem is encountered, a detailed engineering analysis may be conducted with recommendations made to correct the situation. These recommendations are handled in three ways.

- Initially, through the MCDOT maintenance process for relatively simple and inexpensive solutions.
- More complex problems are handled by the MCDOT's Traffic Engineering Division.
- Complex problems involving significant changes that require substantial funding amounts are handled through the MCDOT's Transportation Improvement Program (TIP).

## **ANALYSIS OF MCDOT'S SPOT SAFETY IMPROVEMENTS FOR FY 2012**

### **Identifying and Ranking Intersection Safety Improvements**

The most recent Manual on Uniform Traffic Control Devices (MUTCD) is used by MCDOT as the guide to determine whether an identified safety problem meets the criteria, also known as warrants, to move forward to become a project. The MUTCD provides a guide to install multi-way stop control or traffic signals when it is determined that five or more reported crashes at an intersection have occurred in a 12-month period, and are susceptible to correction by one or more traffic control alternatives. Other warrant factors may also be used to determine if an intersection needs improvements such as signalization, additional turn lanes, or other safety items.

## **SAFETY AUDIT PROGRAM**

MCDOT Traffic Engineering is continuing its program to identify and evaluate roadway conditions and to prioritize and schedule improvements for upcoming years. This program is a continuation, at the local level, of the MAG initiative, also known as the Safety Audit Program. This program ensures that the latest safety standards are included in the designs for new roadways. A large percentage of MCDOT roadways were constructed 20 to 30 years ago with the design standards applicable at the time. The goal of this program is to be proactive in identifying those areas where current design standards may be more applicable.

Criteria to determine priorities includes accident history, average daily traffic, roadway function, posted speed, and already scheduled transportation improvement projects. Accident history is used to evaluate the roadway and determine if improvements are required. Accident locations are plotted as indicated on the Arizona Department of Transportation (ADOT) accident reports. If five or more correctable accidents are detected within a roadway segment or intersection and occur within a 12 month period during the past three years, an engineering evaluation follows to determine what action, if any, should to be taken. Once projects meet the warrants criteria, projects are typically implemented in the order in which they have been identified for improvement.

## **SPOT SAFETY IMPROVEMENT PROJECT ACCOMPLISHMENTS FOR FY 2009**

In 2012, 13 projects were completed (Table 1). These were implemented by the MCDOT Traffic Engineering Division. Ten projects were identified in FY 2013 for completion (Table 2).

## **EVALUATION OF SAFETY**

MCDOT is continuing its ongoing process of analyzing locations that exhibit potential safety problems. The initial step each year is to examine the locations and number of crashes, crash rates, injury severity, and the types of crashes occurring on the roadways in unincorporated portion of Maricopa County.

## **OVERALL COUNTY CRASH RATES**

Table 4 shows the relationship between the vehicle miles of travel per mile of County Roadway and the total roadway miles in the County system through 2012. This table shows that the miles of County roadways are continuously declining primarily due to annexations, while the vehicle miles of travel on these remaining

**Table 1: Safety Improvement Projects Completed in FY 2012**

	Location	Project
1	Burton Avenue & 184th Avenue (Cortessa Elementary School)	School Crossing
2	Castle Hot Springs Road West & Rockaway Hills Dr	Multiway Stop
3	Daisy Mountain Drive & Dedication Way	New Signal
4	Daisy Mountain Drive & Hastings Way	New Signal
5	Daisy Mountain Drive & Meridian Drive	New Signal
6	Dobbins Road & 43rd Avenue	Multiway Stop
7	Glendale Avenue & Cotton Lane	Multiway Stop
8	Happy Valley Parkway & 115th Avenue	Signal Update
9	Lower Buckeye Road & Airport Road	Multiway Stop
10	MC 85 & Baseline Road	New Signal
11	MC 85 & Sarival Avenue	New Signal
12	Northern Avenue & Litchfield Road	Signal Update
13	Stardust Blvd. & 135th Avenue	New Signal

**Table 2: Planned Spot Safety Improvement Projects for FY 2013**

	Location	Project
1	Banff Lane: 75th Avenue - 79th Avenue	Traffic Calming
2	Baseline Road & Miller Road	New Signal
3	Beloat Road & Jackrabbit Trail / Tuthill Road	Roadway Improvements
4	Elliot Road & Sossaman Road	New Signal
5	Fire Station Driveway - North of Sun City Blvd.	New Signal
6	Meeker Blvd. & Wilson Way	New Signal
7	Olive Avenue & Reems Road	New Signal
8	Olive Avenue & Sarival Avenue	New Signal
9	R.H. Johnson Blvd. & Trail Ridge Drive	New Signal
10	Southern Avenue & Meridian Road	New Signal

roadways are constantly increasing. The net result is a slight increase in the congestion on the County roads each year.

## **COUNTY CRASH STATISTICS**

The overall County crash rate is the best indicator to represent the history of the entire County system. The overall crash rate measures the number of crashes per million vehicle miles of travel (VMT) per mile of County-owned roadway per year in the unincorporated portions of the County. Table 3 shows that while the total number of crashes in the unincorporated County has increased, the overall County crash rate has declined when compared to the increase in population in the unincorporated County. Since 1998 despite an increase of more than 53,000 people, more licensed drivers, and a rising number of miles traveled on County roadways, the crash rates for all types of crashes has declined. Descriptive County crash statistics are included in Tables 3-34.

The rate of all types of crashes in the unincorporated County in the 1998-2010 period has declined with respect to the population and miles traveled on County roadways. Single vehicle crashes used to be the most common type but two years ago they were exceeded by rear-end crashes. This trend mirrors the most common crash type in the cities and towns and indicates that the unincorporated County is becoming more urbanized.

Fatal crashes declined in FY 2010, due in part to the reduction of single vehicle crashes. Single vehicle crashes are the most deadly and the reduction of this type of crash is a welcome change. The fatality rate in the unincorporated County is now only 1.13 crashes per million vehicle miles of travel. This is slightly below the overall Arizona rate and is equal to the national rate. Bicycle and pedestrian crashes in the unincorporated County are also declining, in keeping with the overall national trend. Another important statistic tracked by the County is crashes in work zones. This type of crash declined from 101 in 1998 to 79 in 2010, another welcomed trend.



Table 3. County Crash Rates 1998-2010

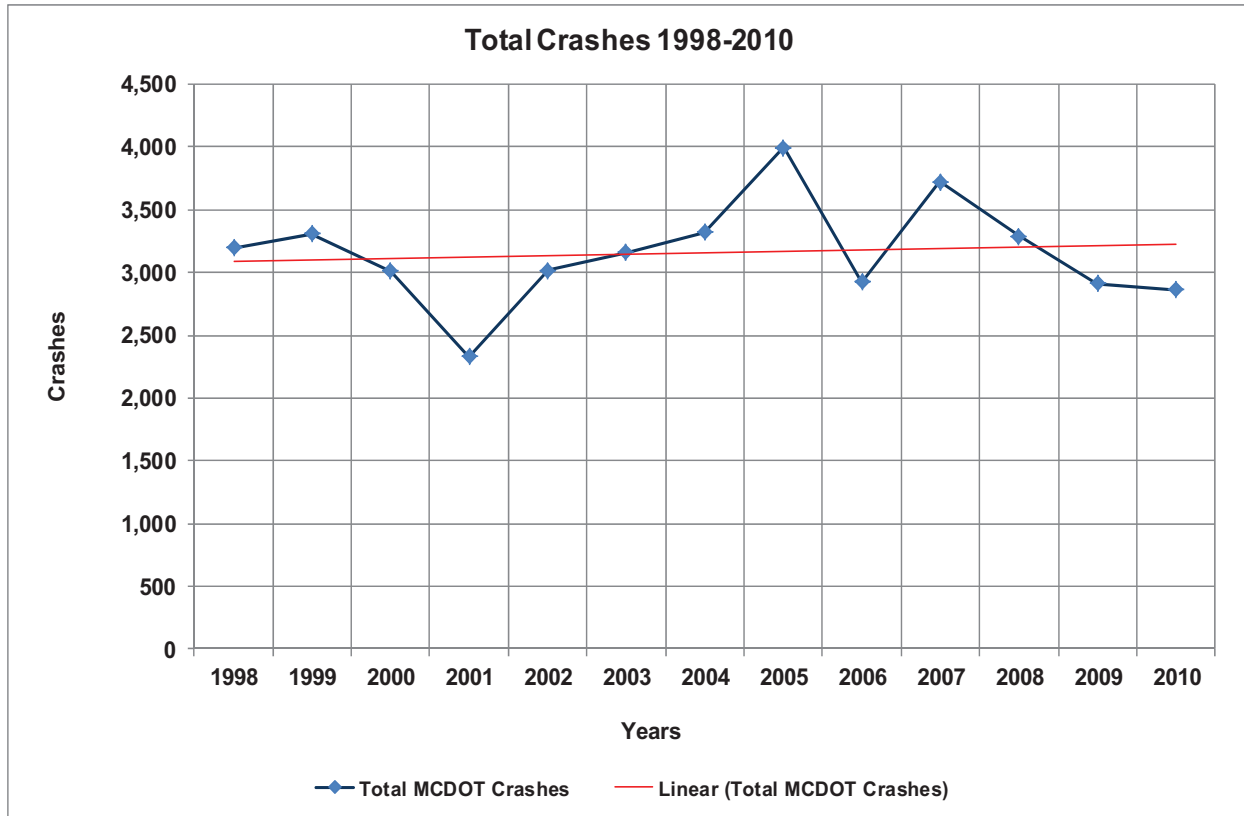
Factors	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Annual MCDOT Crash Rate*	1.71	1.64	1.45	1.05	1.36	1.33	1.37	1.71	1.27	2.03	1.99	1.43	1.30
MCDOT Fatality Rate**	2.89	3.42	2.65	2.04	1.71	2.11	2.18	2.22	3.09	3.16	2.00	1.62	1.13
Arizona Fatality Rate**	2.15	2.18	2.08	2.08	2.17	2.10	2.02	2.03	2.08	1.70	1.53	1.34	1.27
US Fatality Rate**	1.58	1.55	1.55	1.50	1.15	1.50	1.44	1.46	1.42	1.36	1.27	1.13	N/A
Single Vehicle Crash Rate*	0.486	0.477	0.420	0.311	0.409	0.378	0.362	0.384	0.280	0.458	0.464	0.318	0.255
Pedestrian Crash Rate*	0.014	0.017	0.008	0.012	0.013	0.010	0.012	0.012	0.015	0.019	0.011	0.008	0.014
Bicycle Crash Rate*	0.022	0.022	0.014	0.011	0.014	0.013	0.016	0.020	0.013	0.022	0.022	0.011	0.018
Injury Crash Rate*	0.350	0.384	0.317	0.250	0.293	0.283	0.272	0.338	0.228	0.364	0.368	0.254	0.204
Work Zone Related Rate*	0.054	0.084	0.076	0.037	0.056	0.040	0.051	0.065	0.062	0.077	0.078	0.044	0.036
<b>Total MCDOT Crashes</b>	<b>3,200</b>	<b>3,312</b>	<b>3,011</b>	<b>2,329</b>	<b>3,018</b>	<b>3,161</b>	<b>3,324</b>	<b>3,997</b>	<b>2,923</b>	<b>3,723</b>	<b>3,290</b>	<b>2,913</b>	<b>2,865</b>
Miles of County Owned Roads That Have Traffic Counts	1,592	1,729	1,719	1,690	1,685	1,693	1,652	1,591	1,637	1,634	1,628	1,622	1,616
Total County Road Miles	2,829	2,769	2,750	2,680	2,696	2,670	2,618	2,608	2,601	2,600	2,509	2,419	2,353
Million Vehicle Miles/Day	5.1261	5.5297	5.6925	6.0568	6.0822	6.5015	6.6576	6.4052	6.2970	5.0362	4.5212	5.5903	6.0543
VMT/Mile	1,812	1,997	2,070	2,260	2,256	2,435	2,543	2,456	2,421	1,937	1,802	2,311	2,573
% Network with Traffic Counts	56.27%	62.44%	62.51%	63.06%	62.50%	63.41%	63.10%	61.00%	62.94%	62.85%	64.89%	67.05%	68.68%
<b>MCDOT Population</b>	<b>190,200</b>	<b>197,000</b>	<b>203,600</b>	<b>206,800</b>	<b>215,200</b>	<b>219,300</b>	<b>232,000</b>	<b>225,300</b>	<b>231,600</b>	<b>239,300</b>	<b>243,600</b>	<b>244,700</b>	<b>245,801</b>
Crashes Per 100K Pop	1,682.4	1,681.2	1,478.9	1,126.2	1,402.4	1,441.4	1,432.8	1,774.1	1,262.1	1,555.8	1,350.6	1,190.4	1,165.6
Fatal Crashes	47	62	48	34	34	44	48	49	65	54	31	29	24
Fatal/100K Pop	24.71	31.47	23.58	16.44	15.80	20.06	20.69	21.75	28.07	22.57	12.73	11.85	9.76
MCDOT Fatalities	54	69	55	45	38	50	53	52	71	58	33	33	25
MCDOT Fatalities/100K Pop	28.39	35.03	27.01	21.76	17.66	22.80	22.84	23.08	30.66	24.24	13.55	13.49	10.17
Single Vehicle Crashes	909	962	873	687	907	897	879	898	644	841	765	649	563
Single Vehicle/100K Pop	477.92	488.32	428.78	332.21	421.47	409.03	378.88	398.58	278.07	351.44	314.04	265.22	229.05
Pedestrian Crashes	29	35	17	26	30	24	28	27	28	31	23	18	30
Pedestrian/100K Pop	15.25	17.77	8.35	12.57	13.94	10.94	12.07	11.98	12.09	12.95	9.44	7.36	12.20
Bicycle Crashes	41	44	29	25	30	32	38	47	31	41	37	23	39
Bicycle/100K Pop	21.56	22.34	14.24	12.09	13.94	14.59	16.38	20.86	13.39	17.13	15.19	9.40	15.87
Injury Crashes	655	775	659	553	650	671	662	791	523	670	607	518	451
Injury/100K Pop	344.37	393.40	323.67	267.41	302.04	305.97	285.34	351.09	225.82	279.98	249.18	211.69	183.48
Work Zone Related	101	169	158	82	124	95	123	152	143	141	129	90	79
Work Zone/100K Pop	53.10	85.79	77.60	39.65	57.62	43.32	53.02	67.47	61.74	58.92	52.96	36.78	32.14

\* Crashes Per Million Vehicle Miles of Travel (MVM/MT)

\*\* Fatalities Per 100 Million Vehicle Miles of Travel

Source: Crash data is from the Arizona Department of Transportation modified by MCDOT. Only crashes on County roadways are included.

**Table 4: Total Crashes 1998-2010**



**Table 5: Crashes per 100K Population 1998-2010**

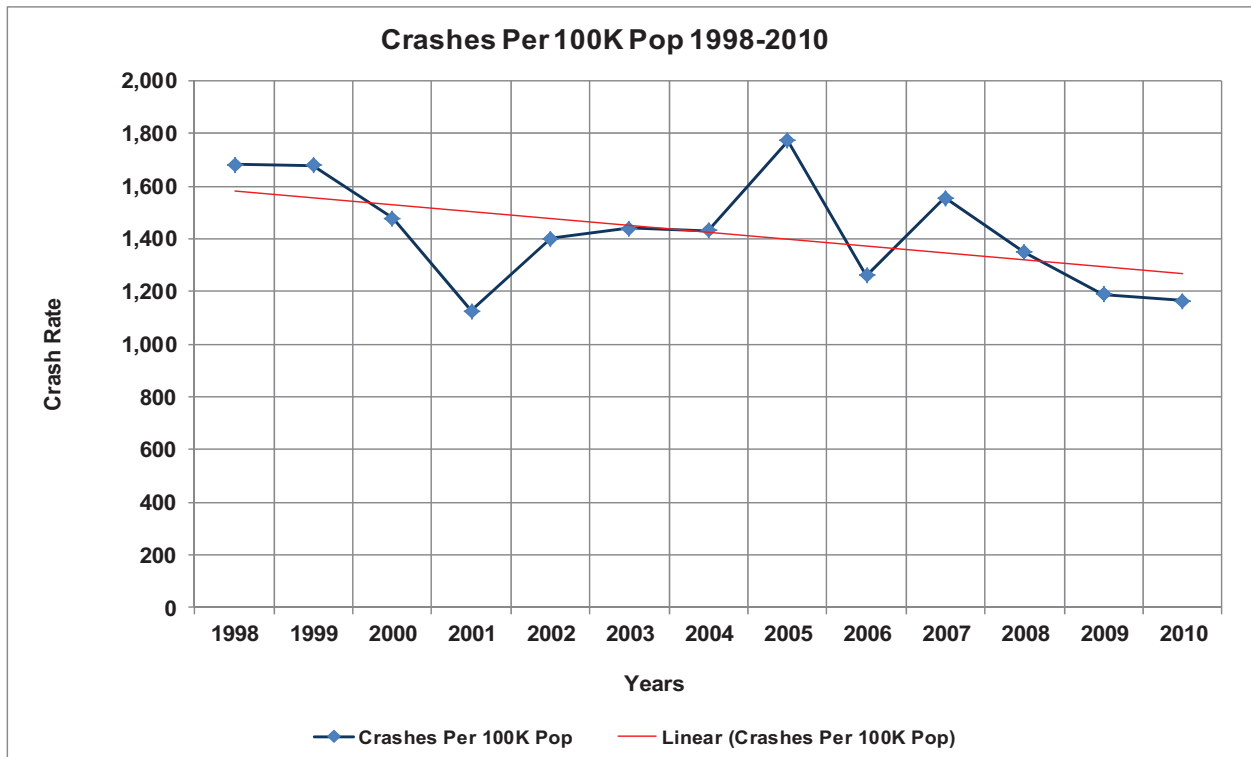


Table 6: County Fatalities 1998-2010

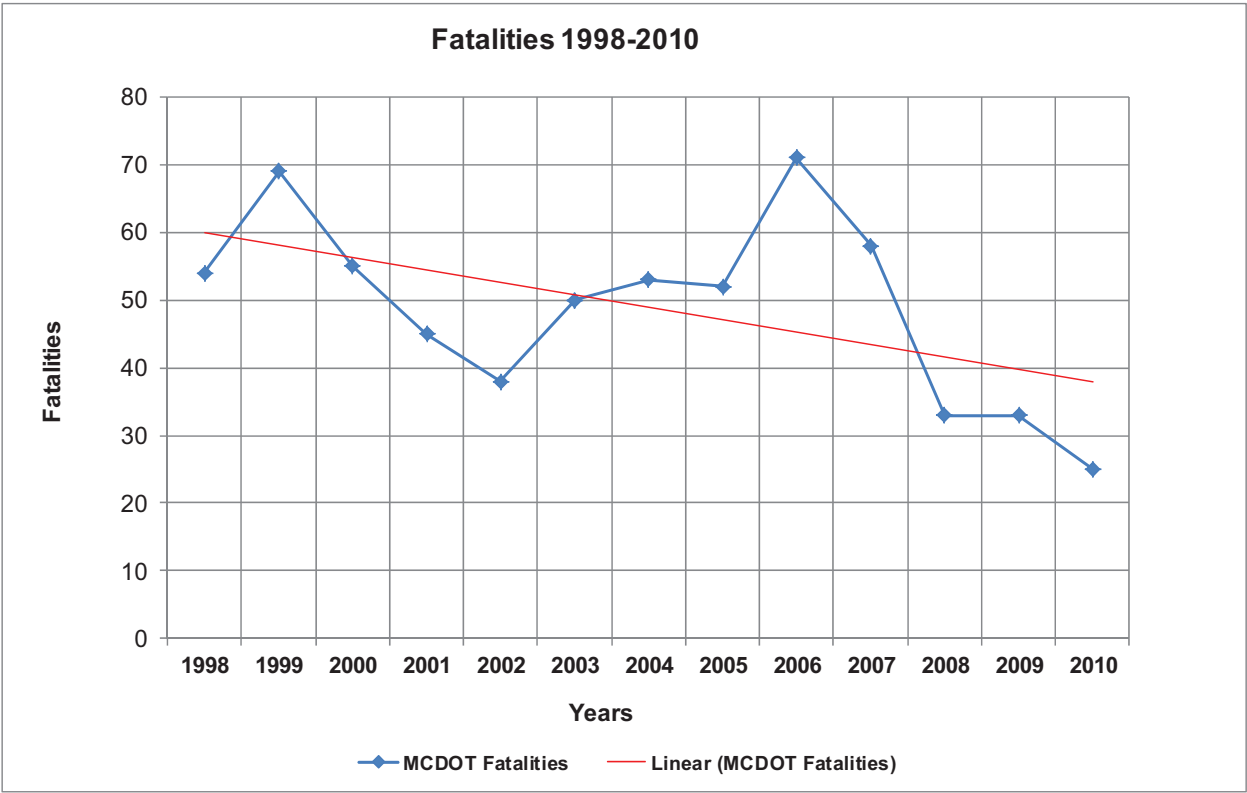


Table 7: County Fatalities Per 100K Population 1998-2010

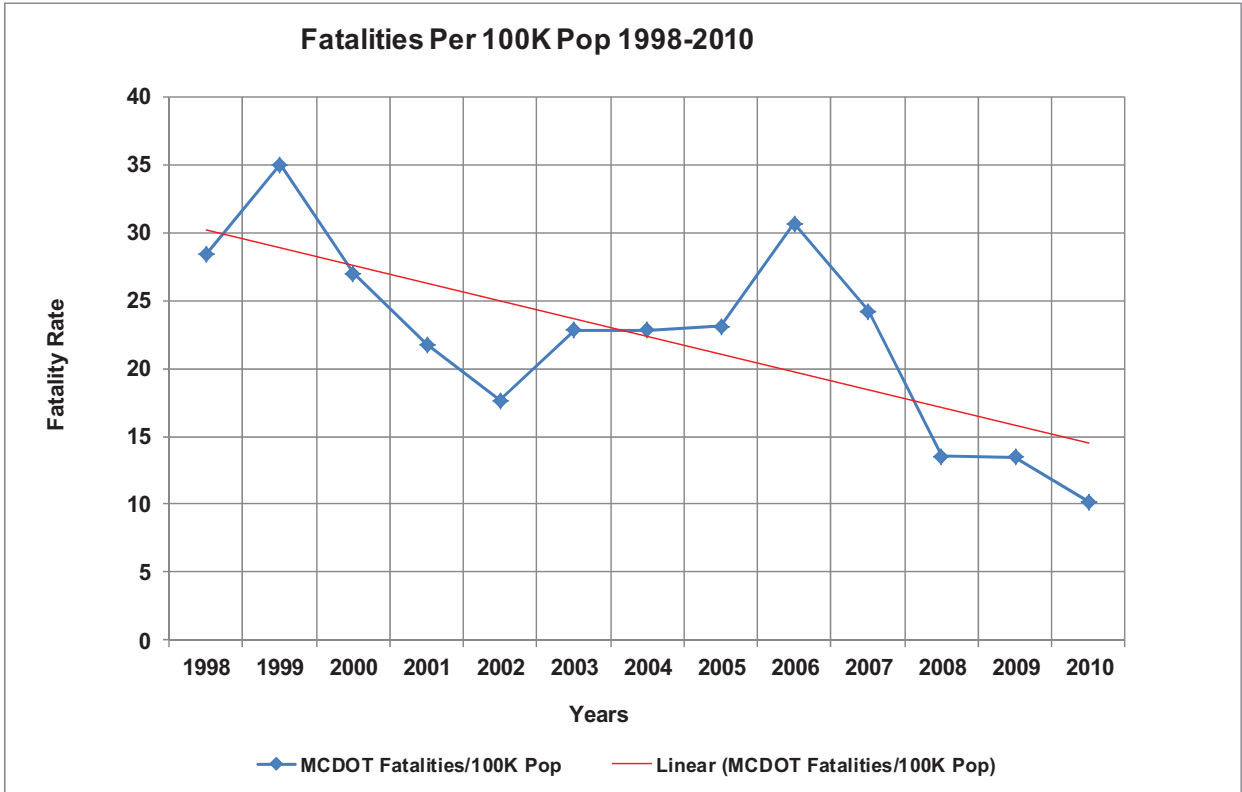
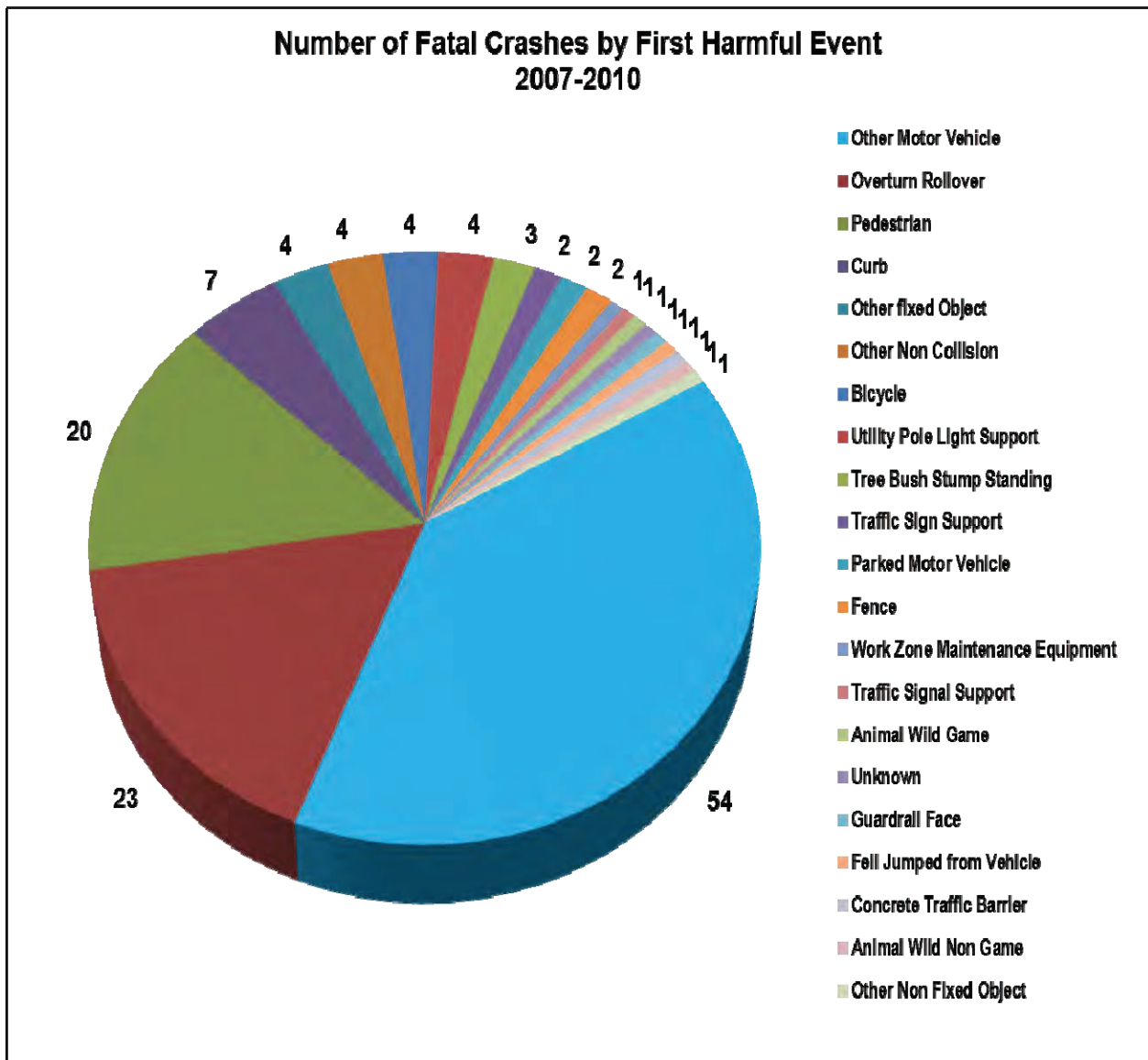
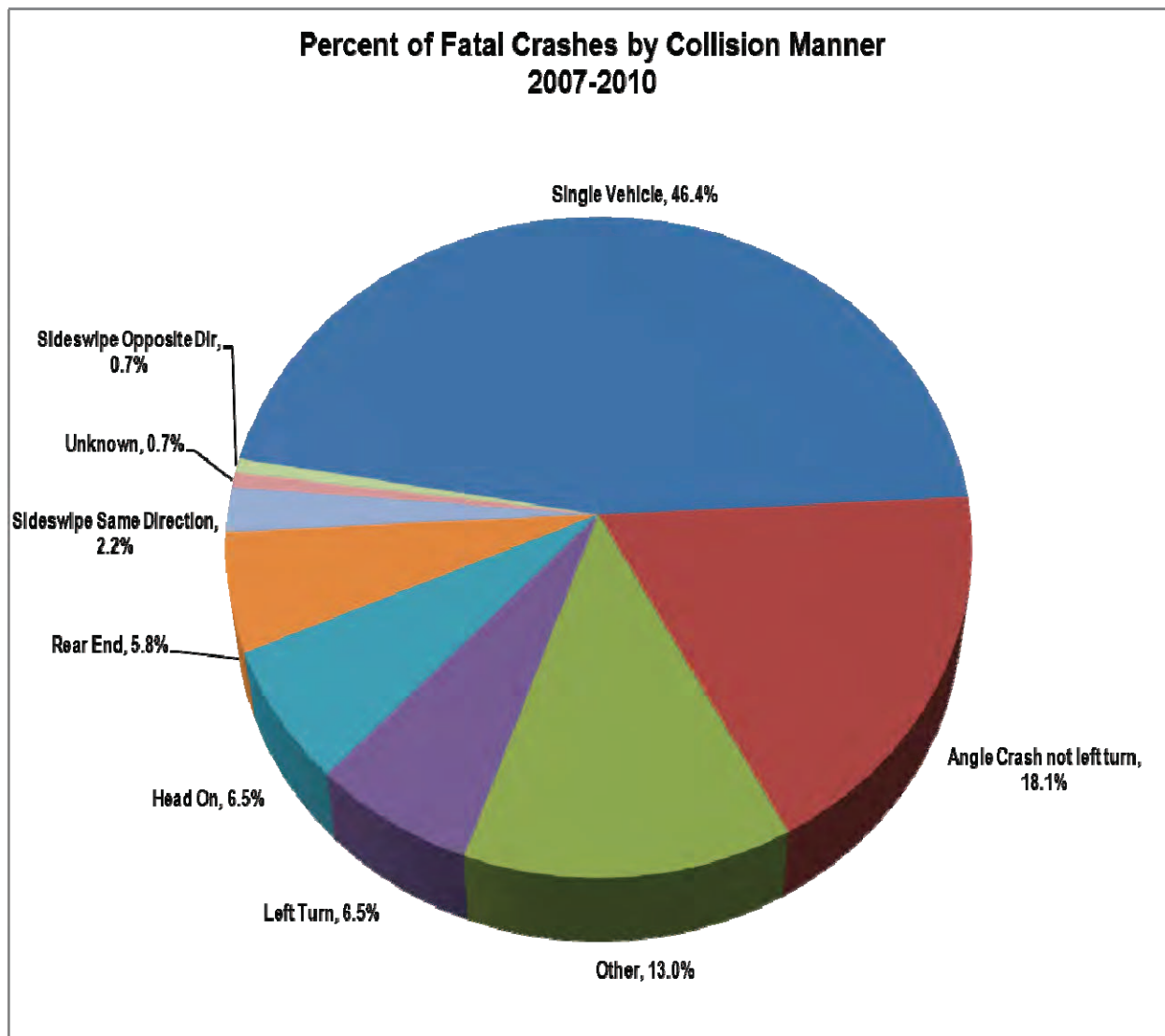


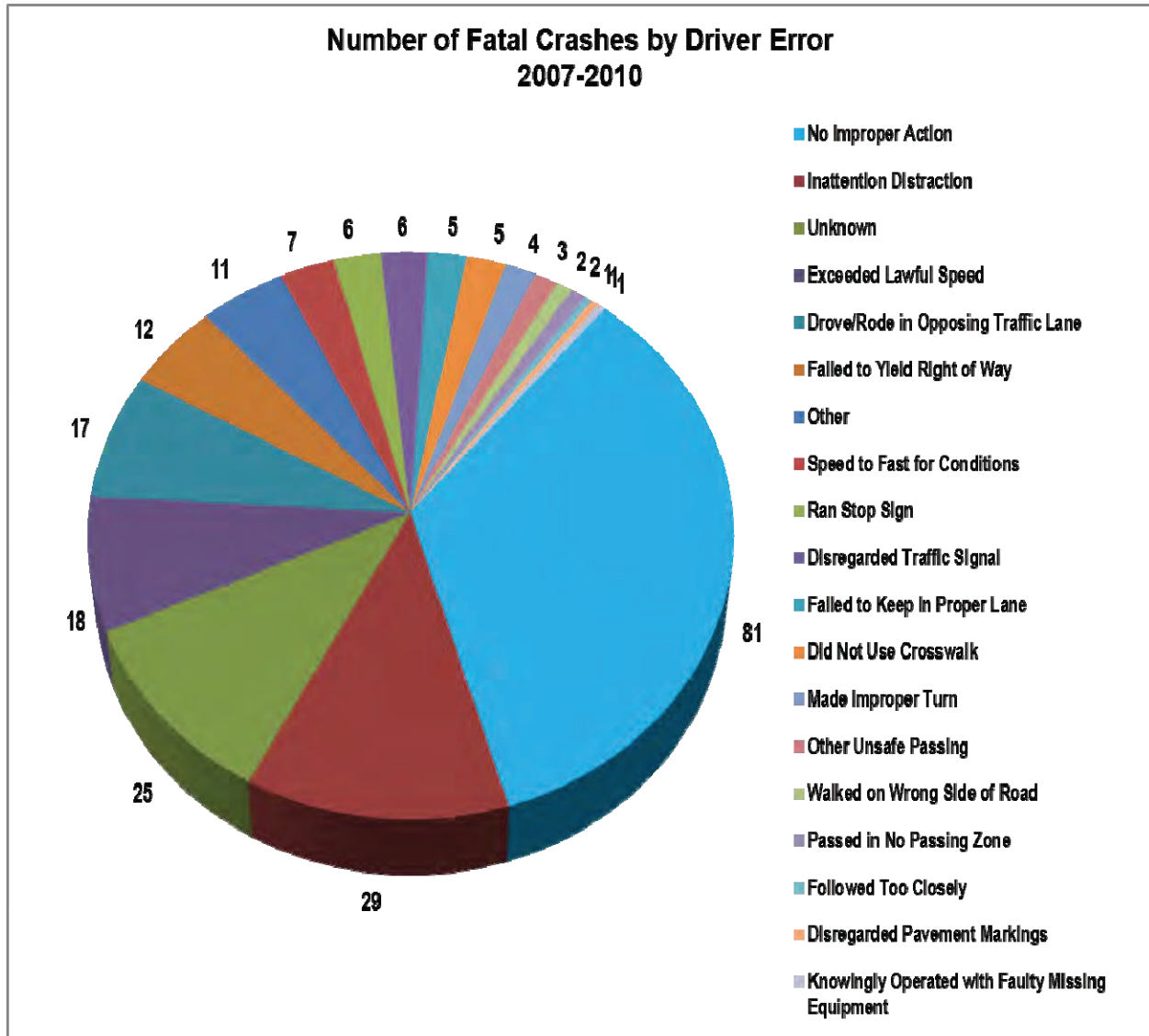
Table 8: Number of Fatal Crashes by First Harmful Event 2007-2010



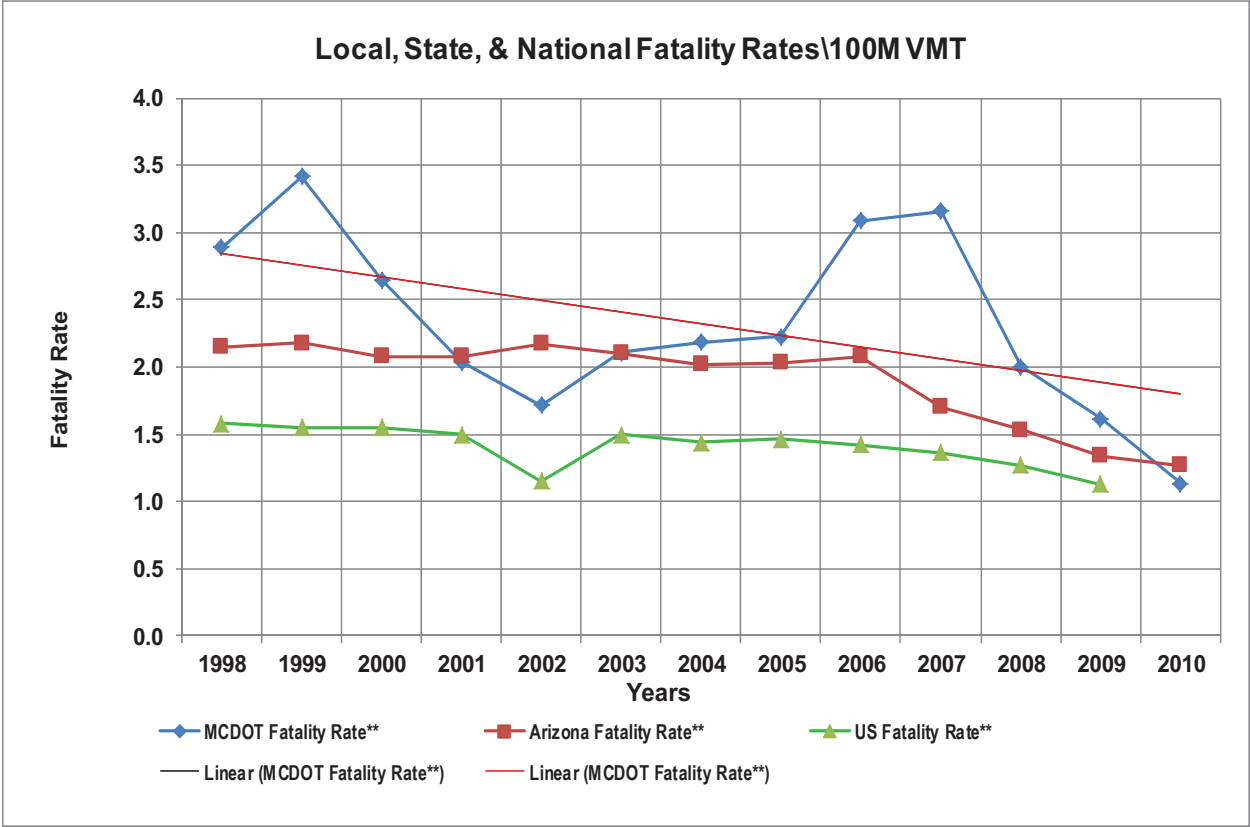
**Table 9: Percent of Fatal Crashes by Collision Manner 2007-2010**



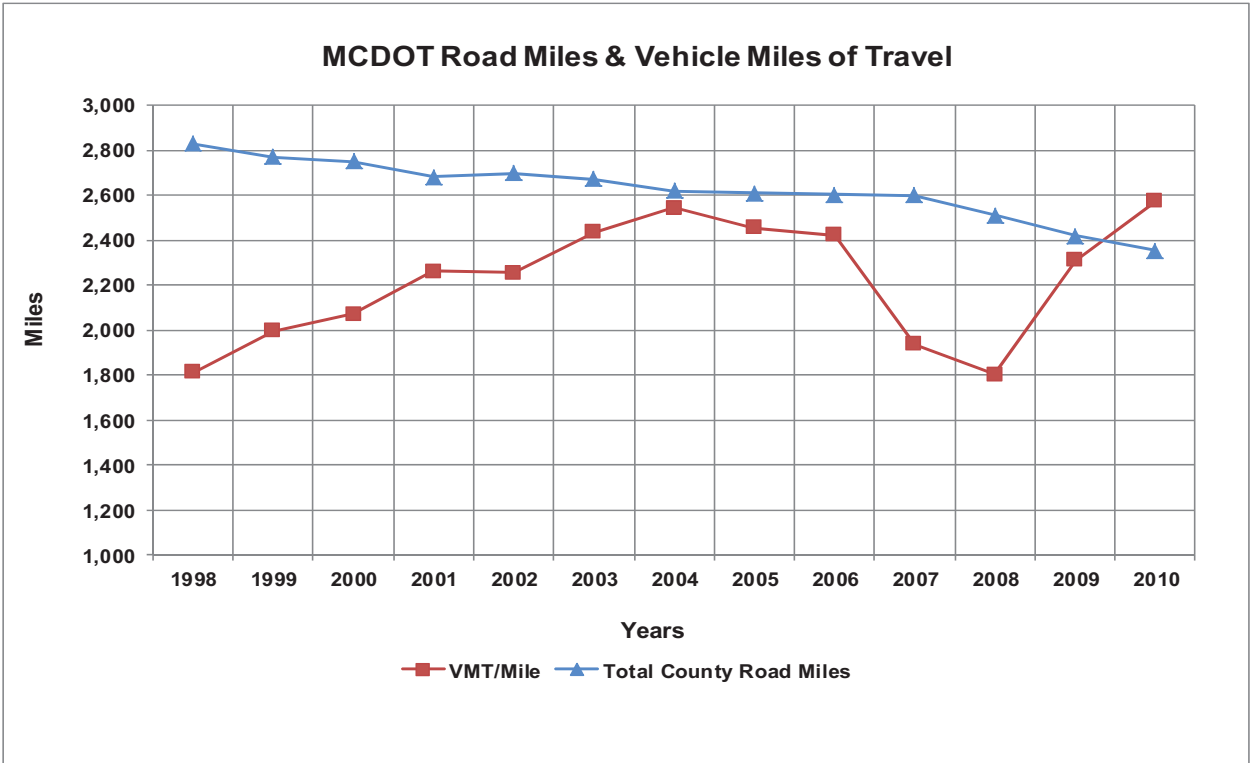
**Table 10: Number of Fatal Crashes by Driver Error 2007-2010**



**Table 11: Local, State, & National Fatality Rates Per 100 MVMT**



**Table 12: County Road Miles & Vehicle Miles of Travel 1998-2010**



**Table 13: Collision Manner for County Crashes 2007-2010**

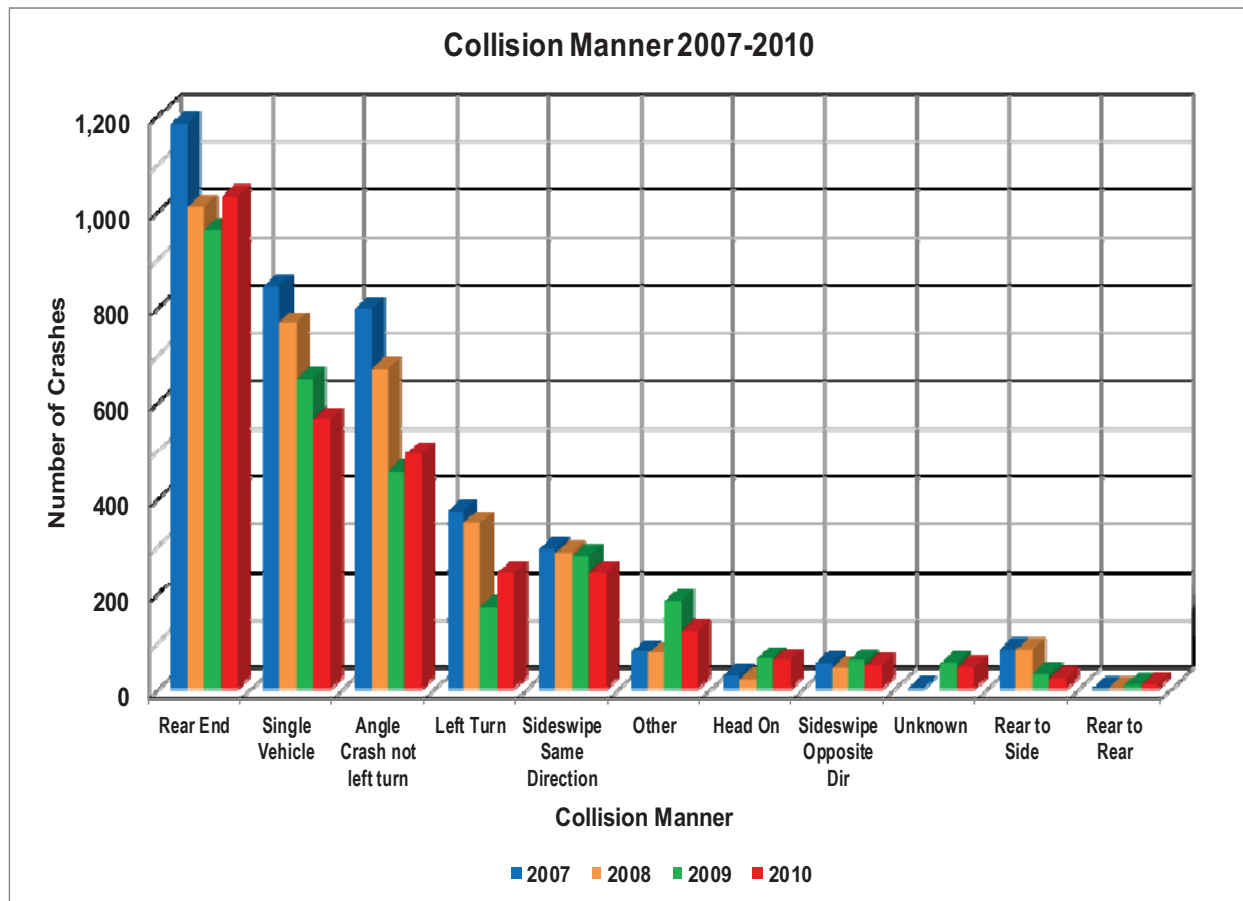




Table 14: Percent of County Driver Errors in Crashes for 2010

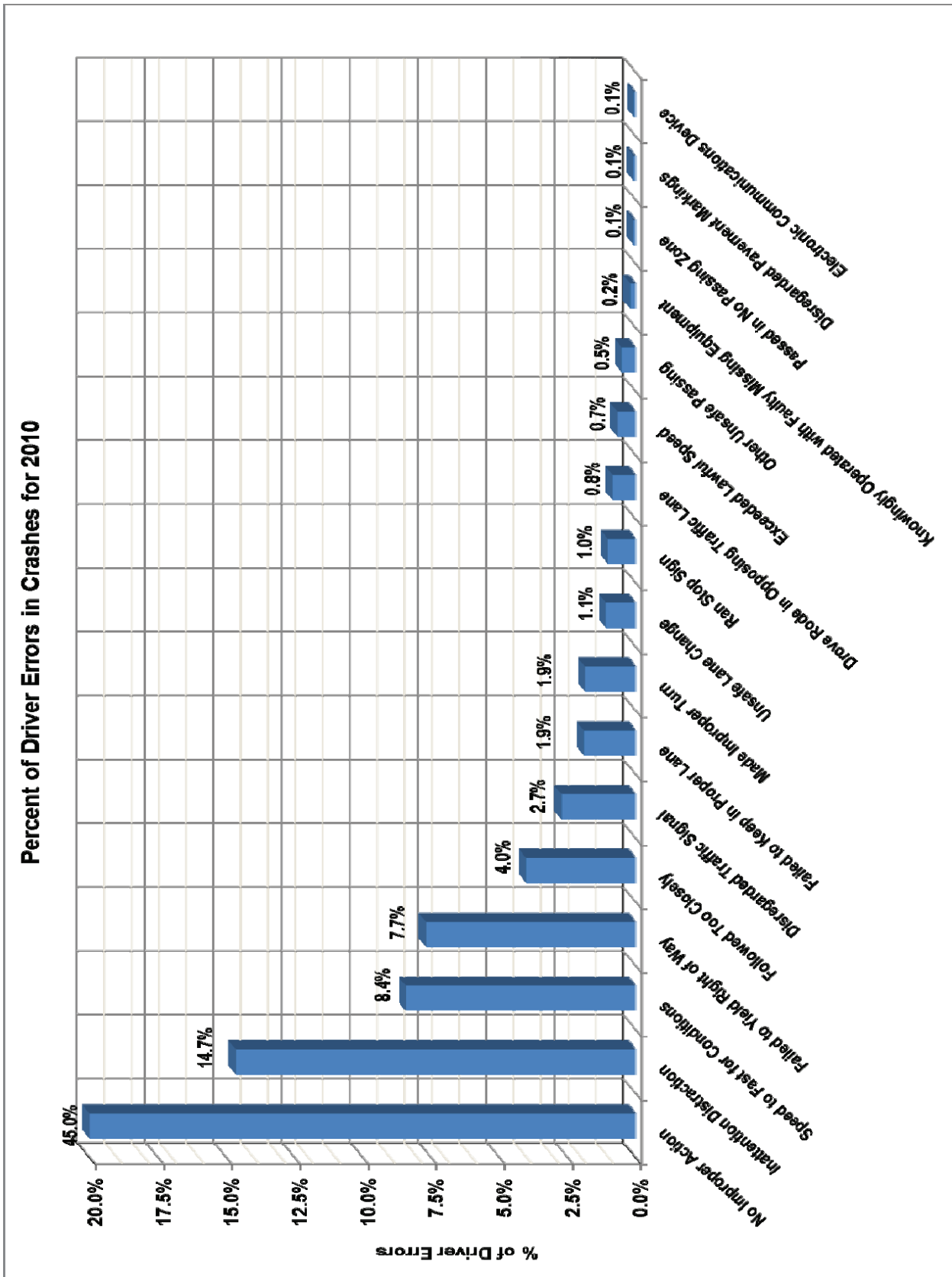


Table 15: Percent of County Crashes by First Harmful Event 2010

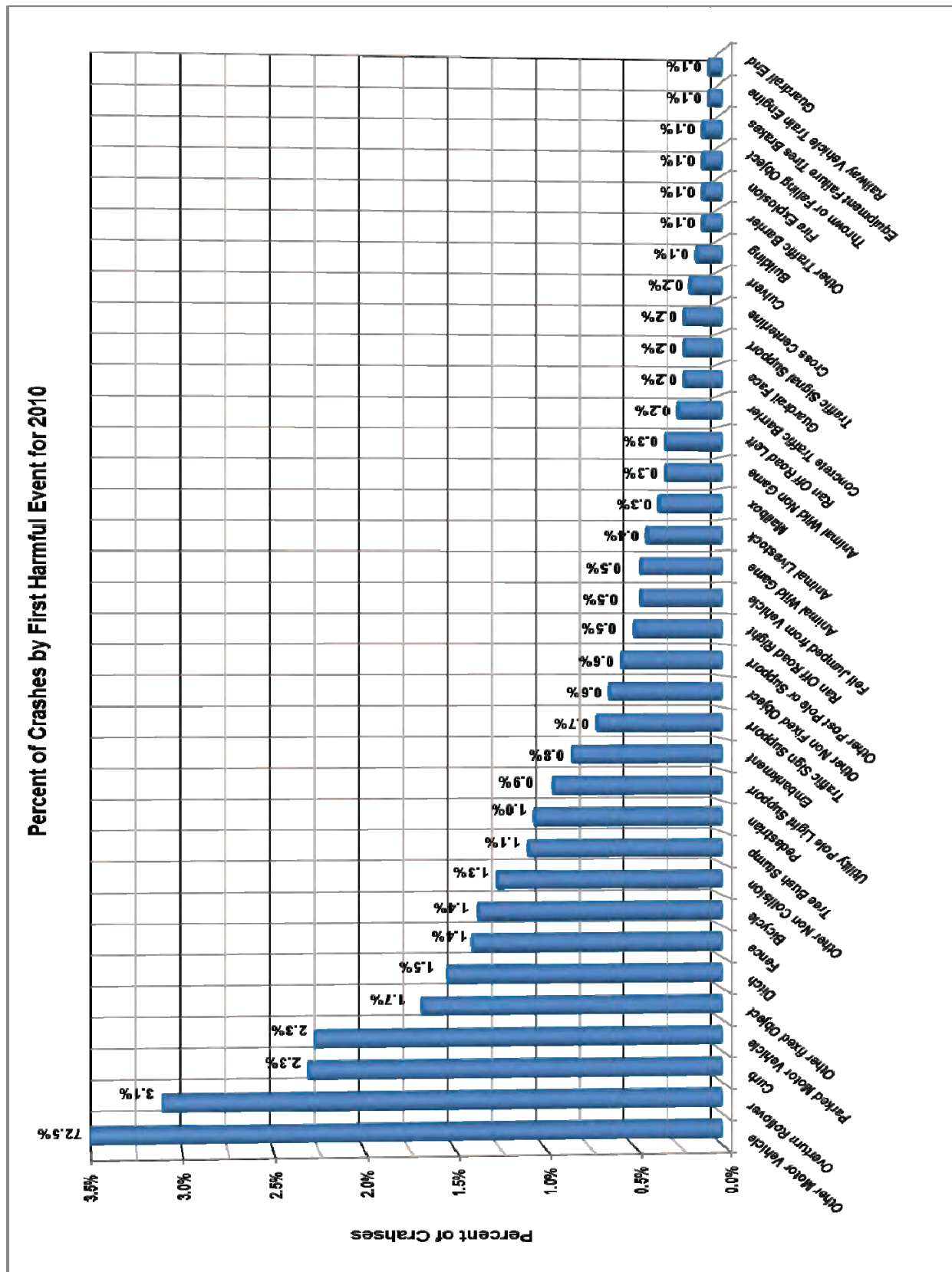


Table 16: County Injury Crashes 1998-2010

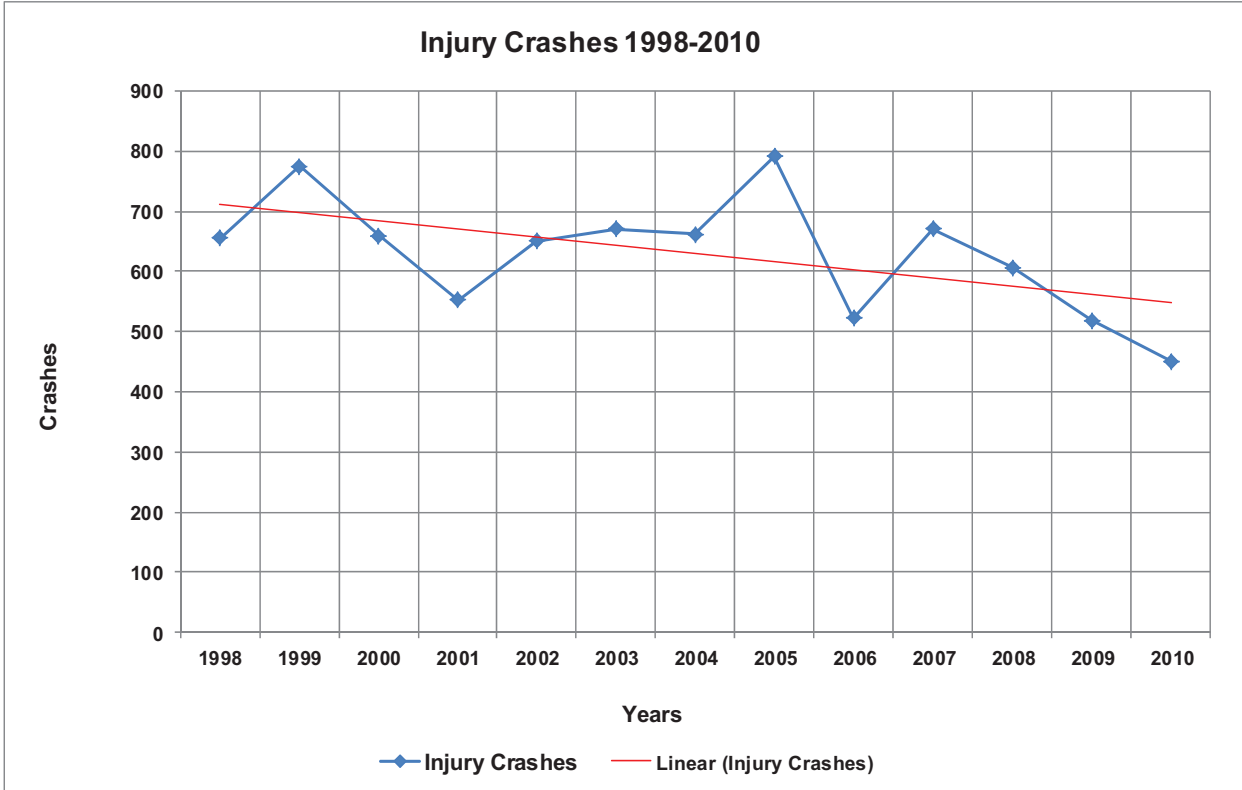
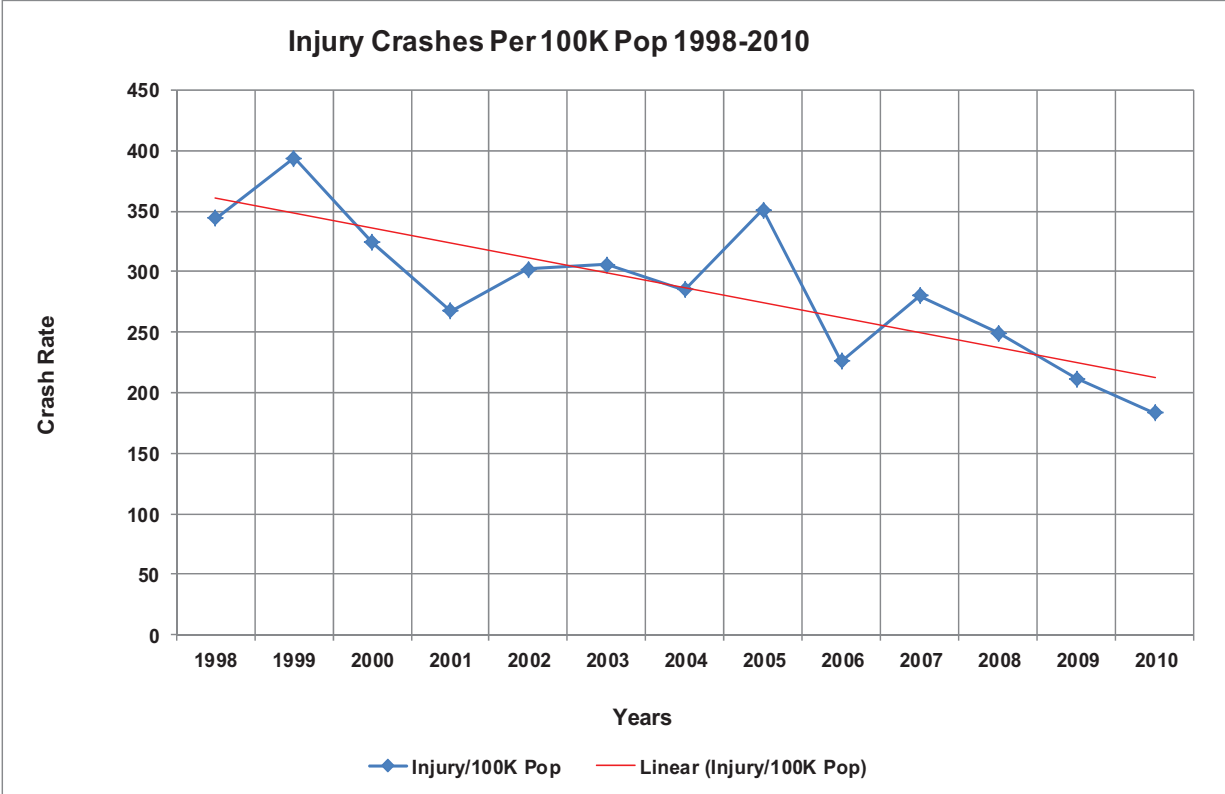


Table 17: County Injury Crashes Per 100K Population 1998-2010



**Table 18: County Injury Severity 2007-2010**

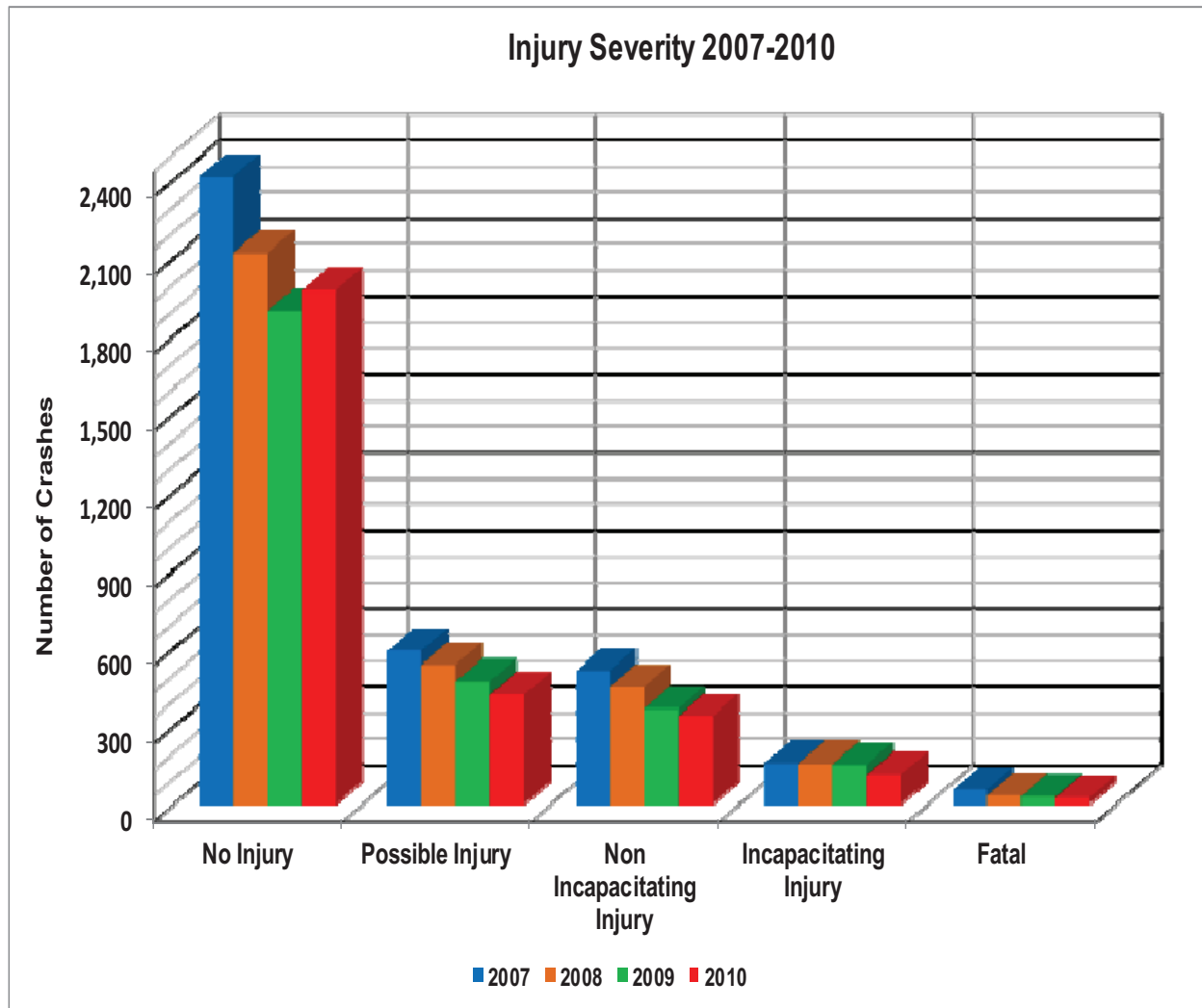


Table 19: County Single Vehicle Crashes 1998-2010

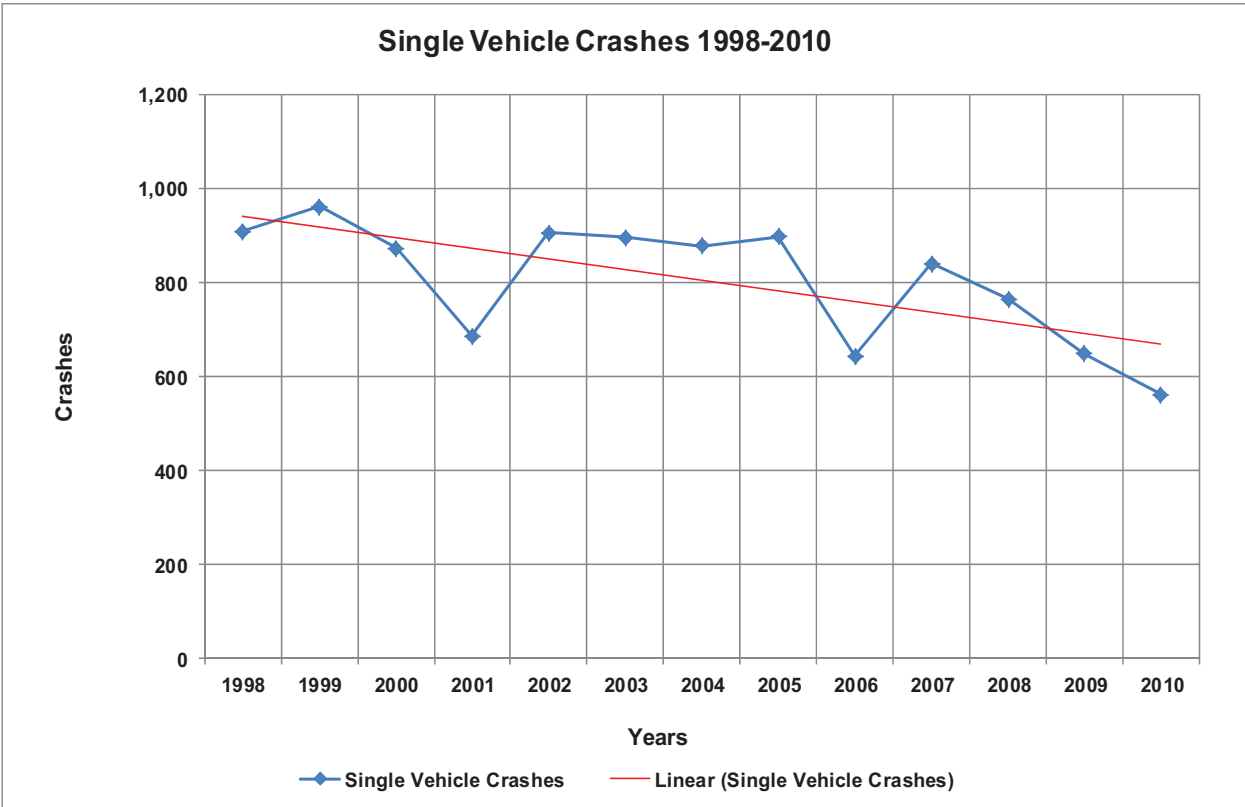


Table 20: County Single Vehicle Crashes Per 100k Population 1998-2010

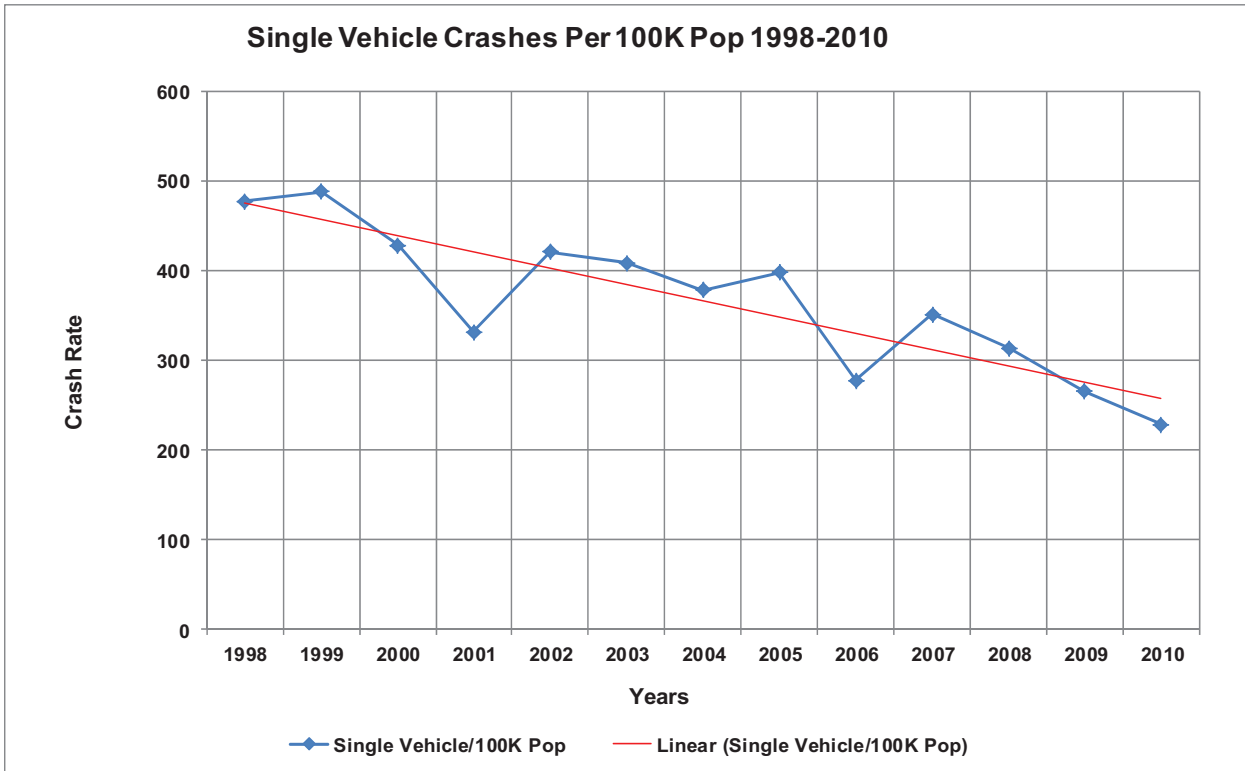


Table 21: County Single Vehicle Crashes 2007-2010, Age of Driver & % of Crashes

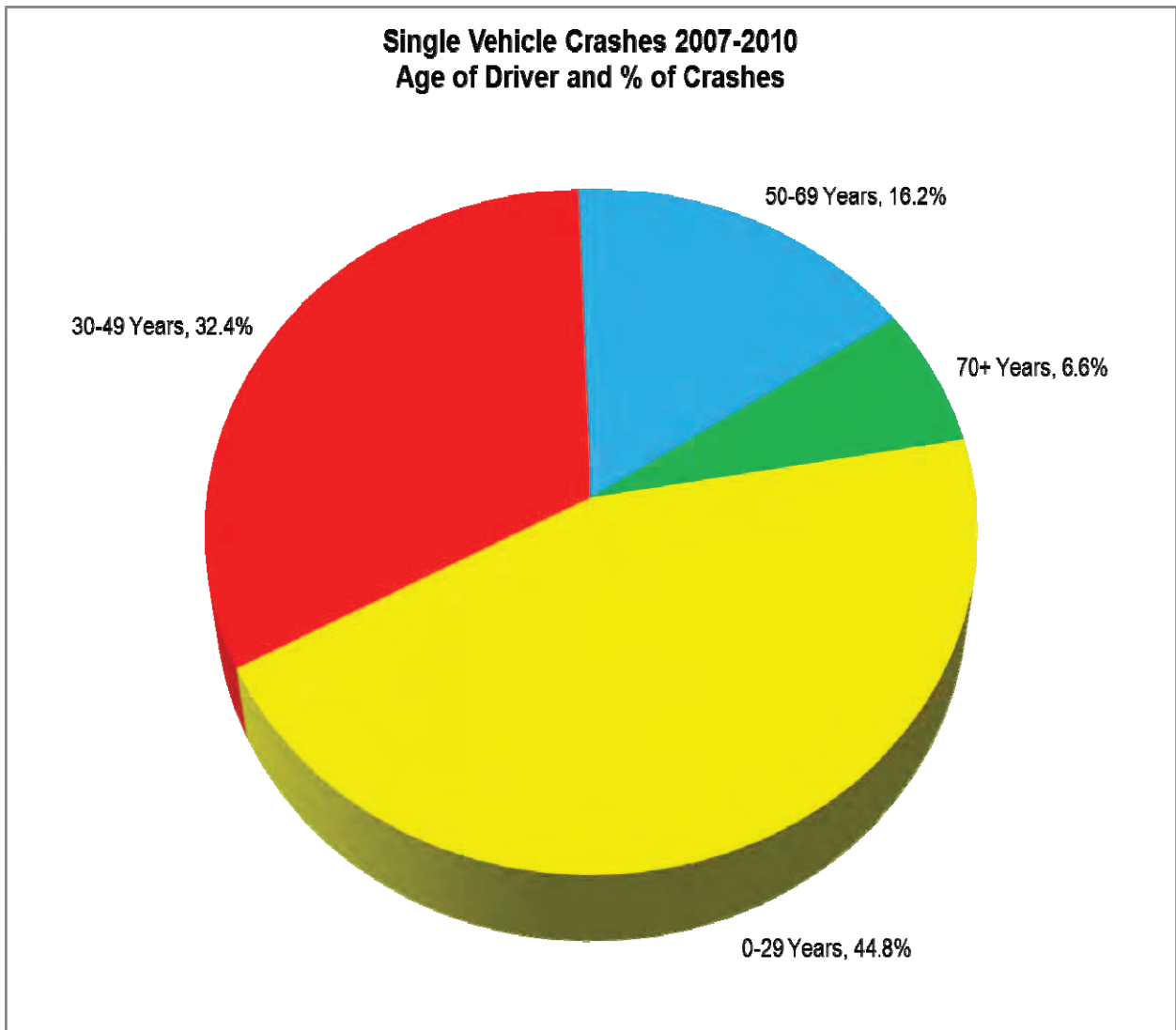
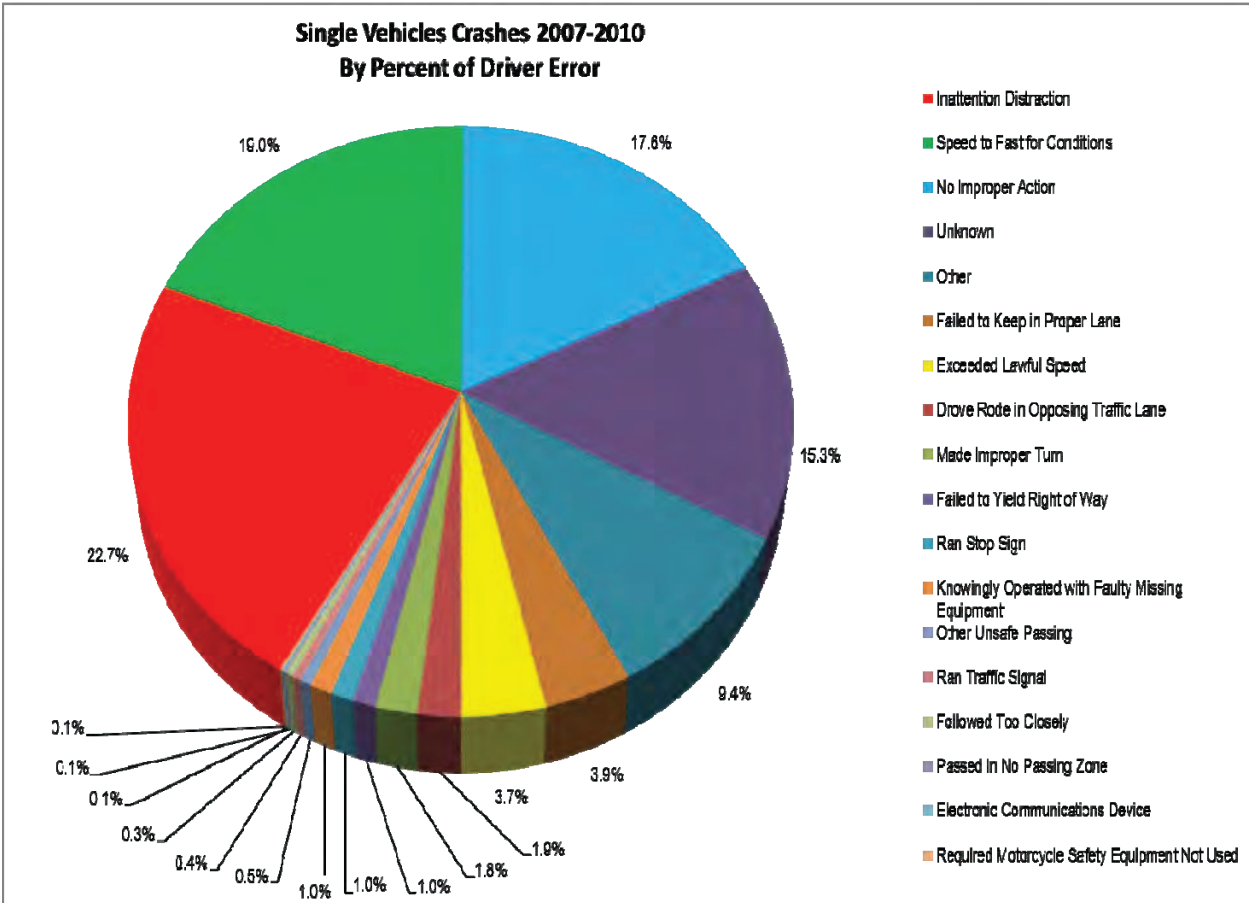
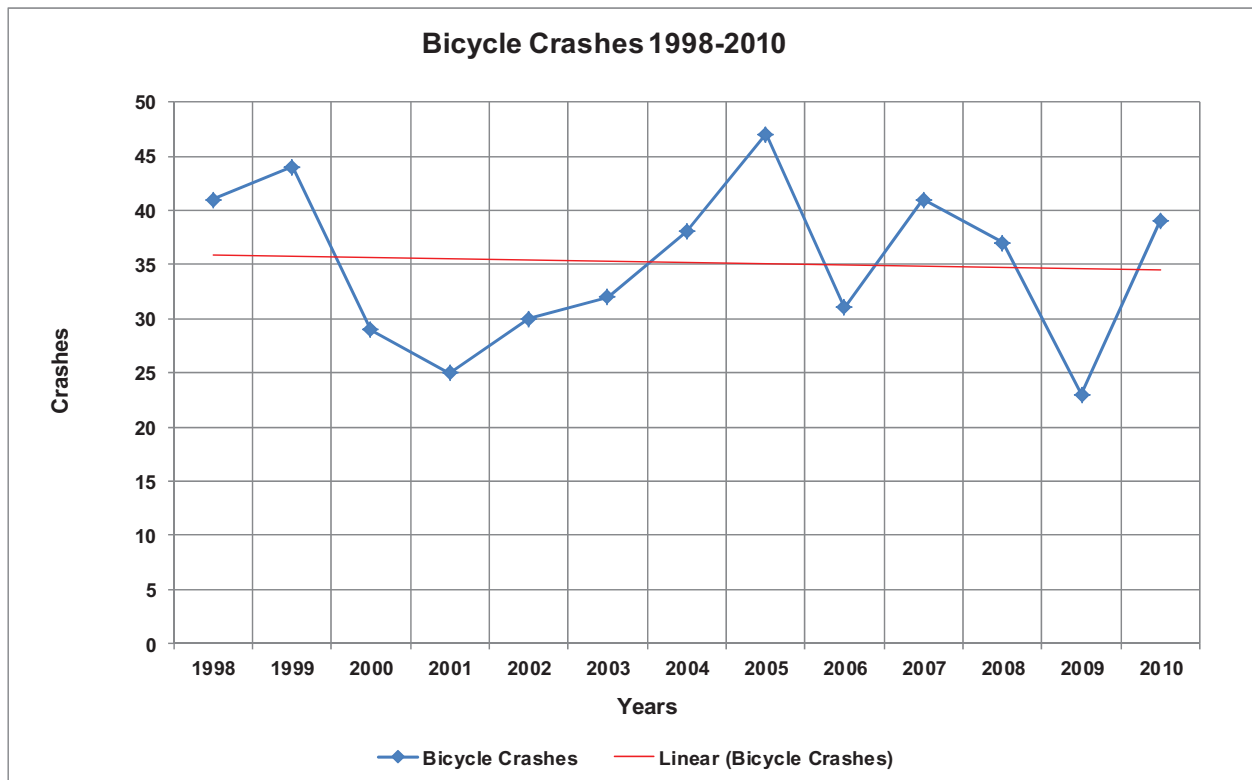


Table 22: County Single Vehicle Crashes 2007-2010, By Percent of Driver Error



**Table 23: County Bicycle Crashes 1998-2010**



**Table 24: County Bicycle Crashes Per 100K Population 1998-2010**

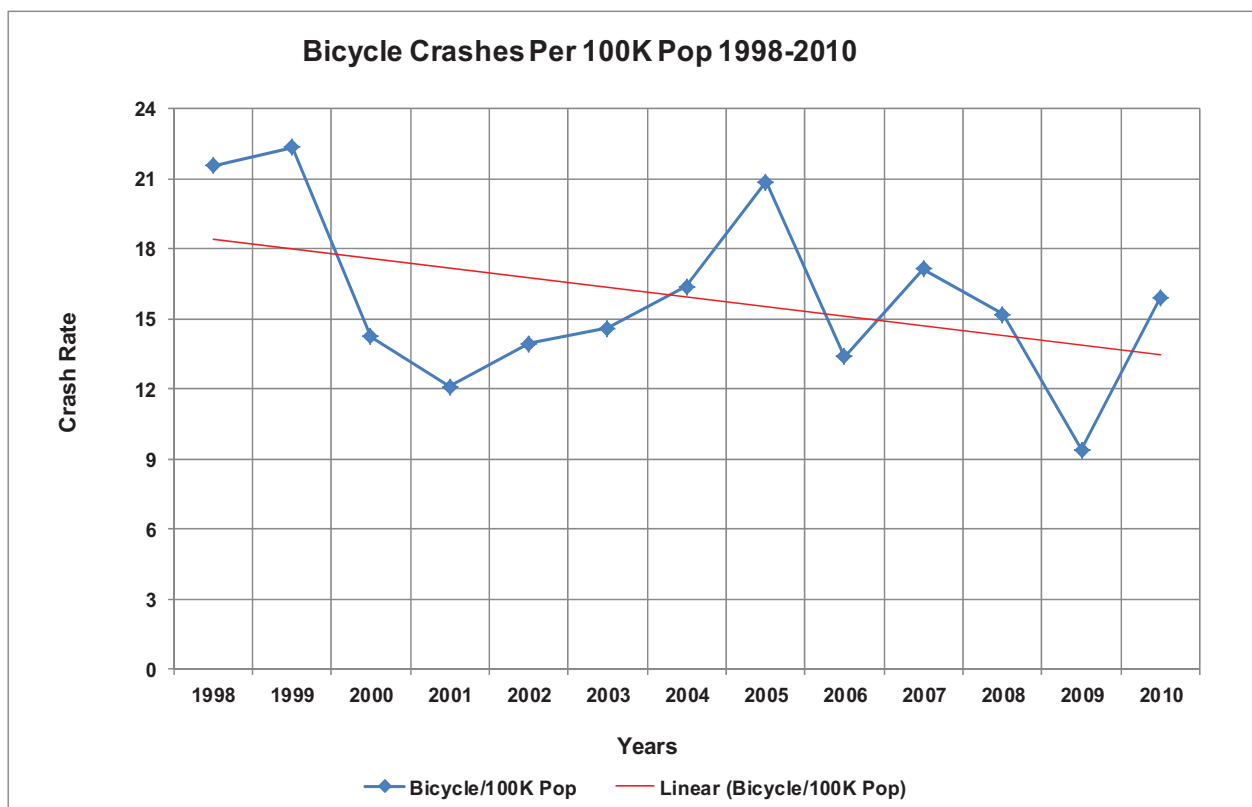




Table 25: County Bicycle Crashes by Age in 2010

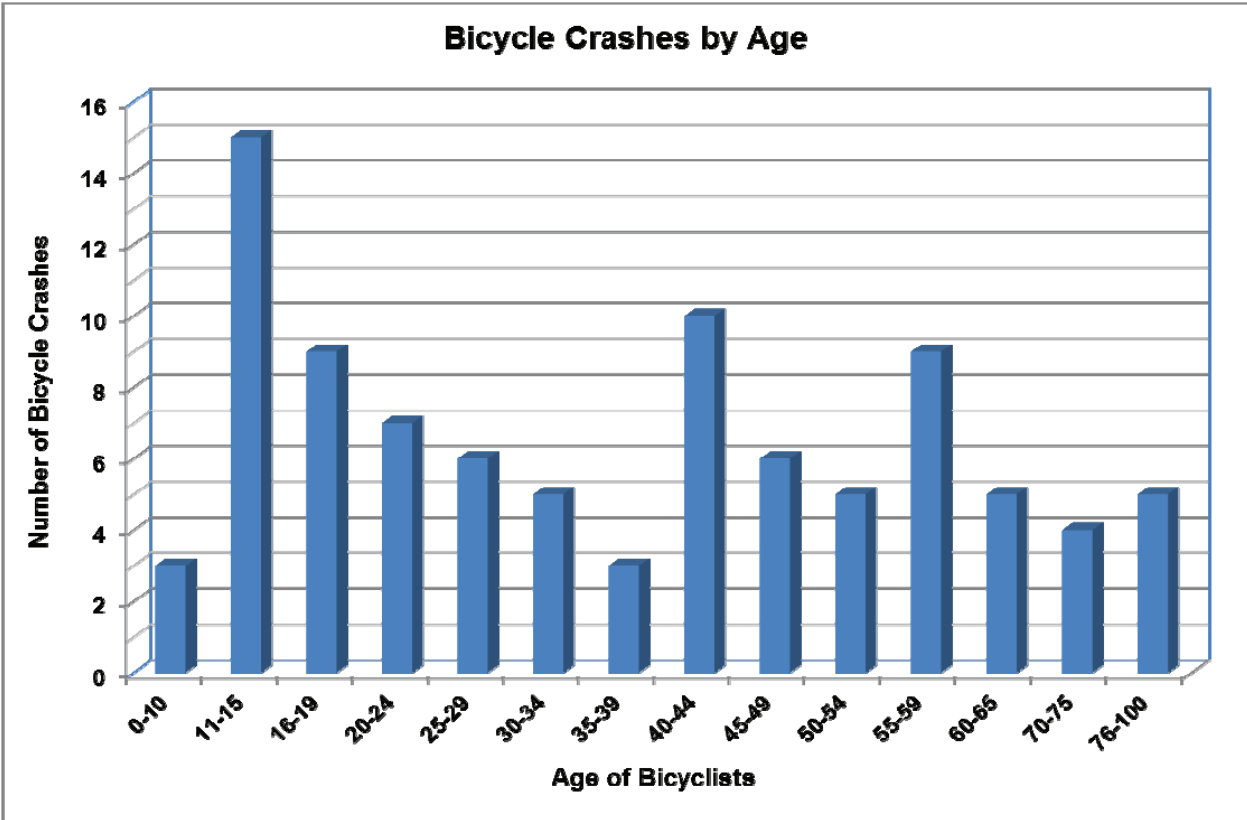
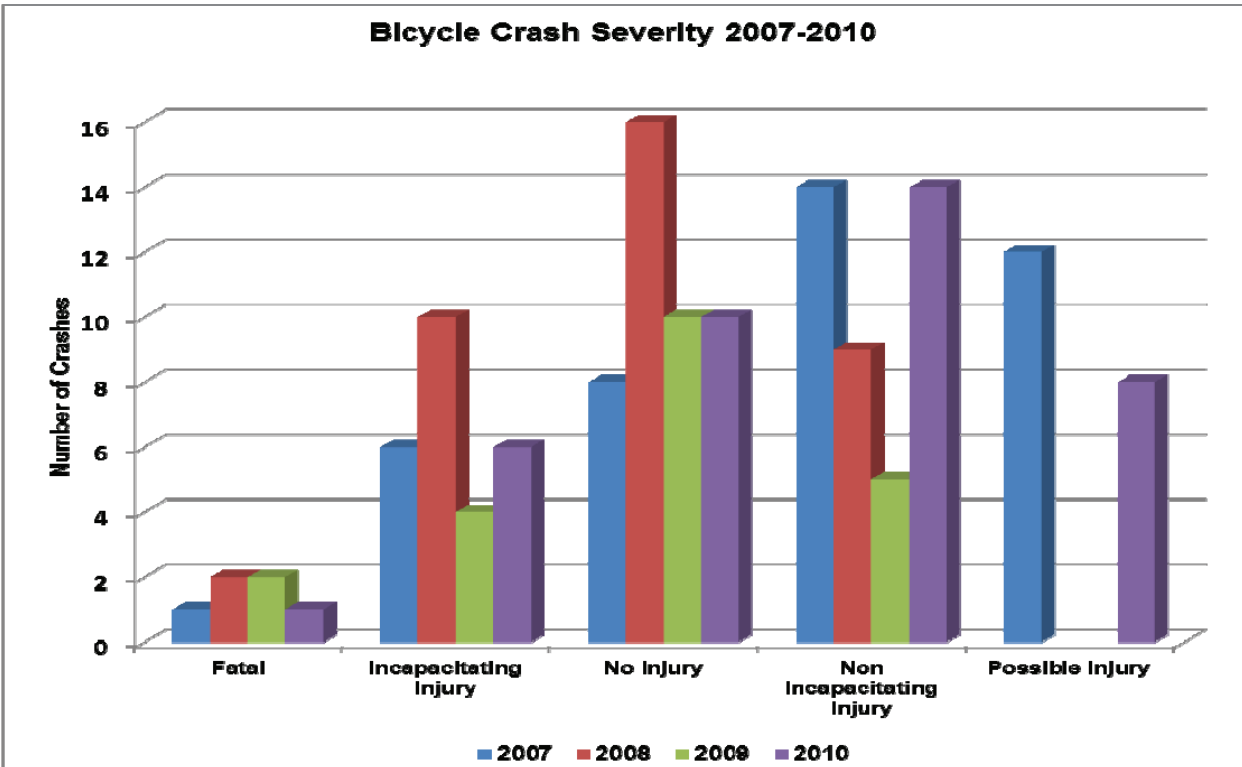
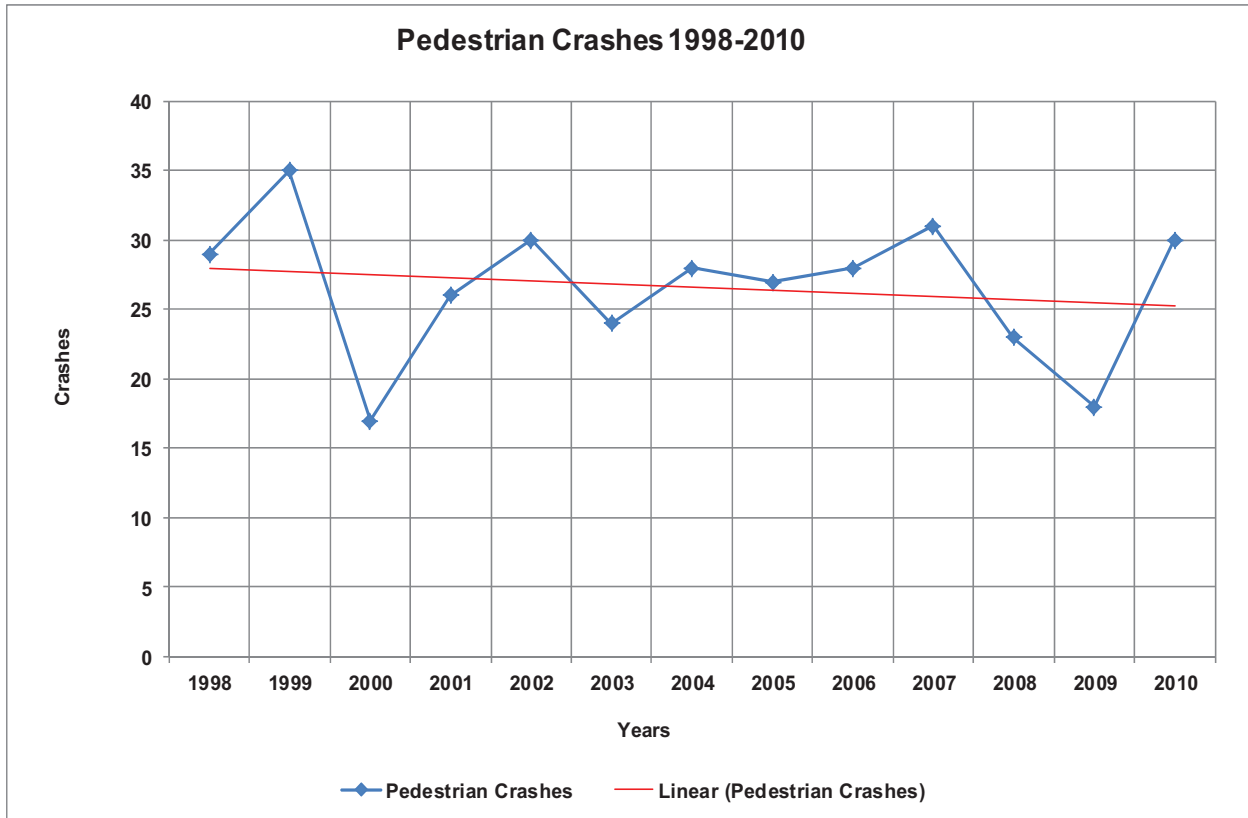


Table 26: County Bicycle Crash Severity 2007-2010



**Table 27: County Pedestrian Crashes 1998-2010**



**Table 28: County Pedestrian Crashes Per 100K Population 1998-2010**

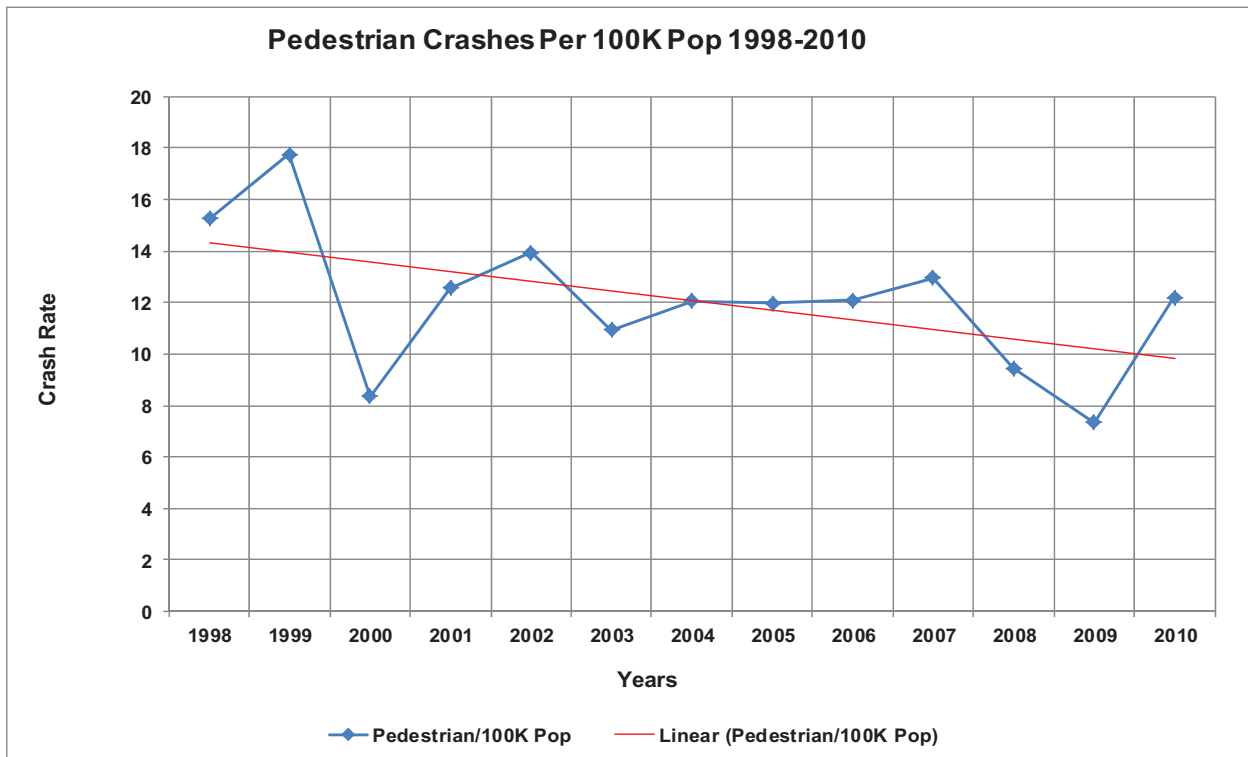


Table 29: Age of Pedestrians Involved in County Crashes in 2010

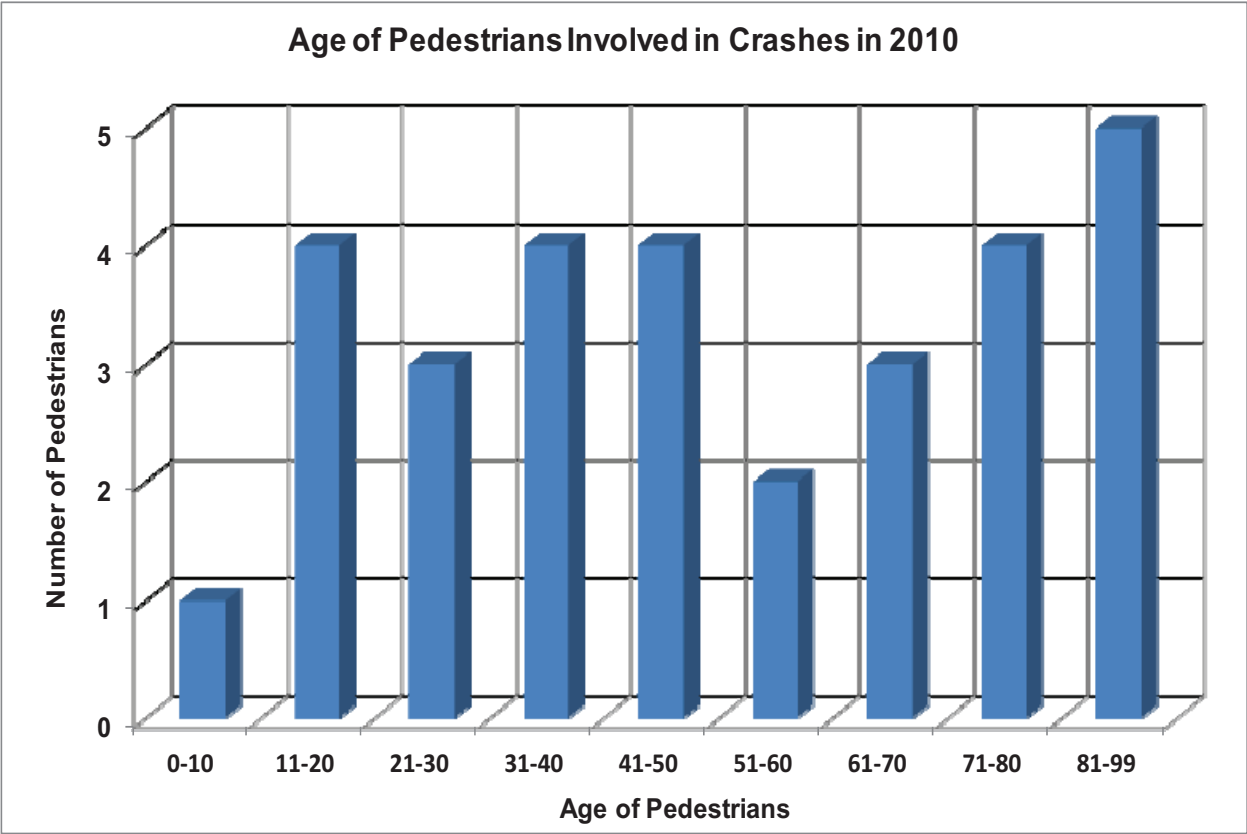
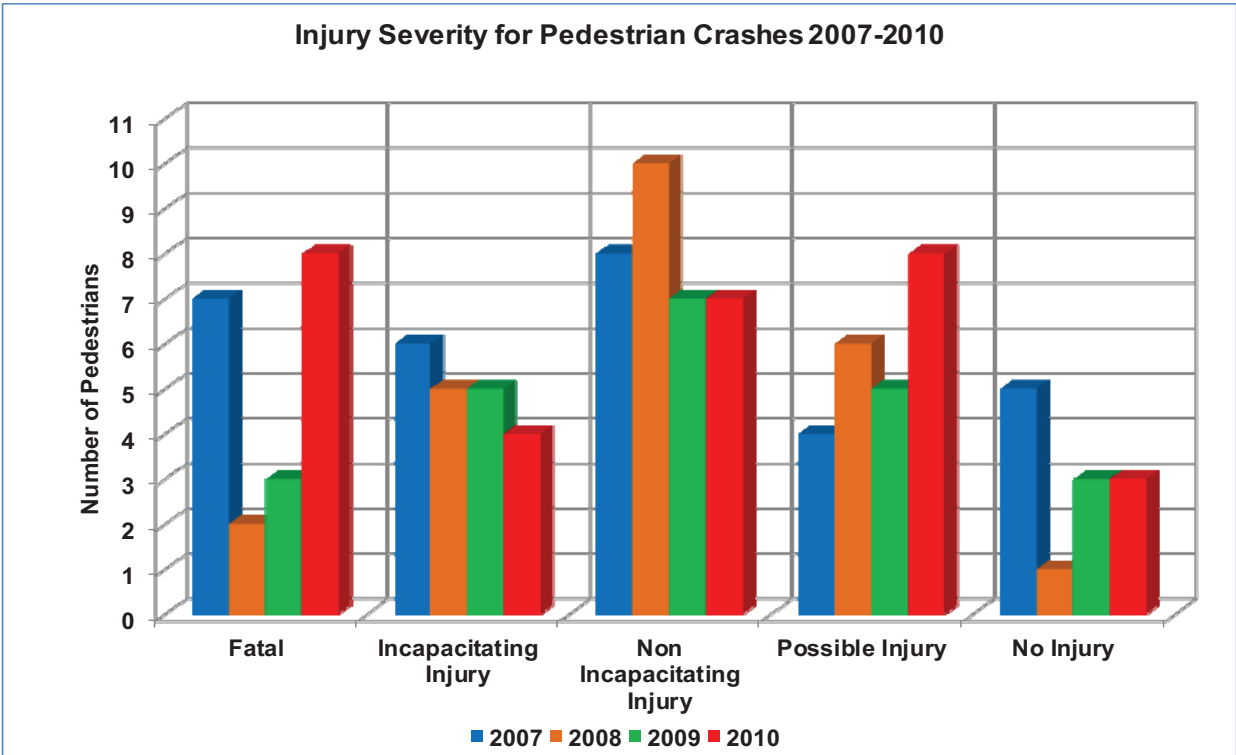
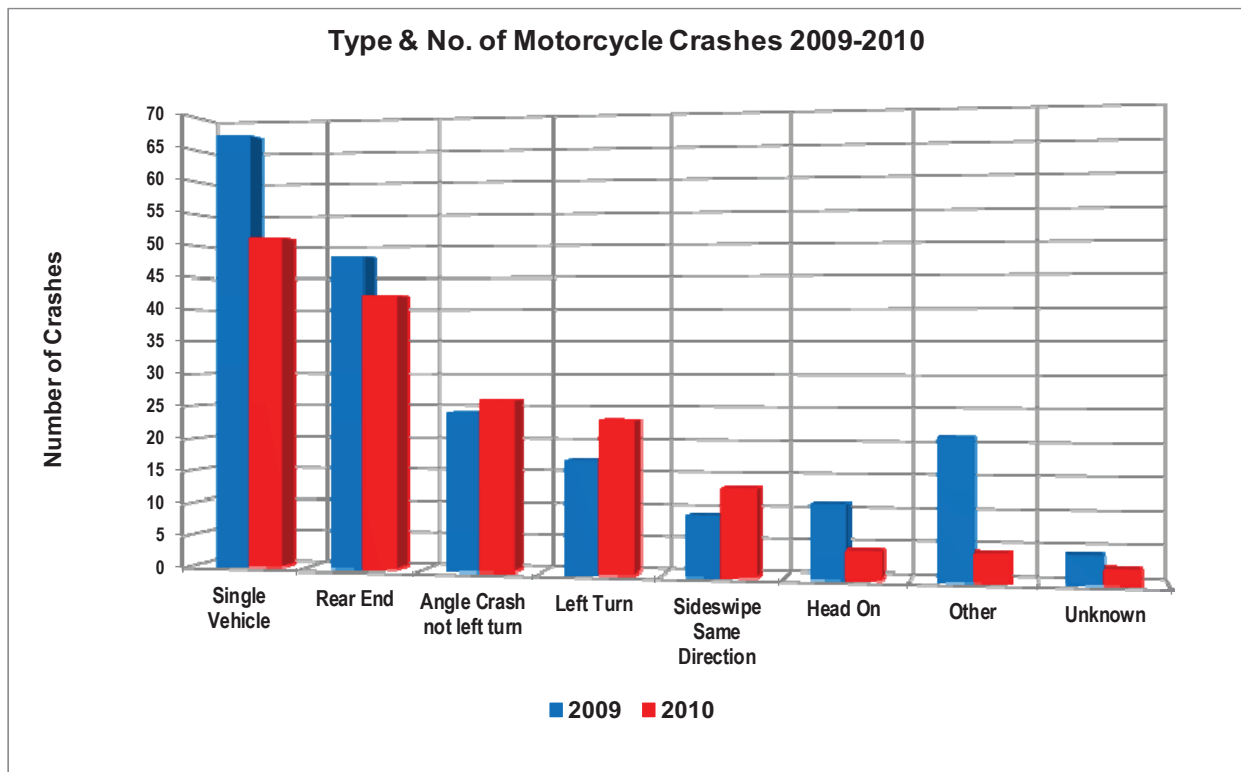


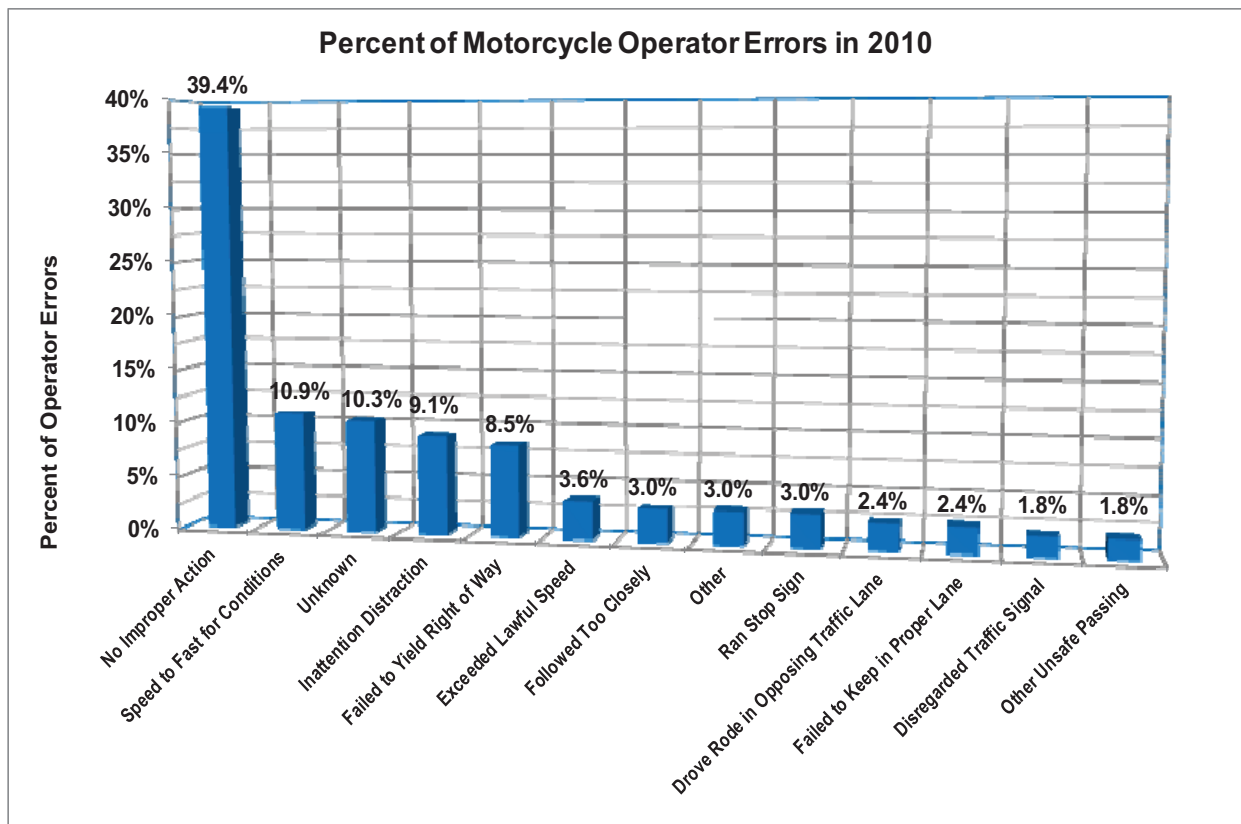
Table 30: Injury Severity for Pedestrians in County Crashes 2007-2010



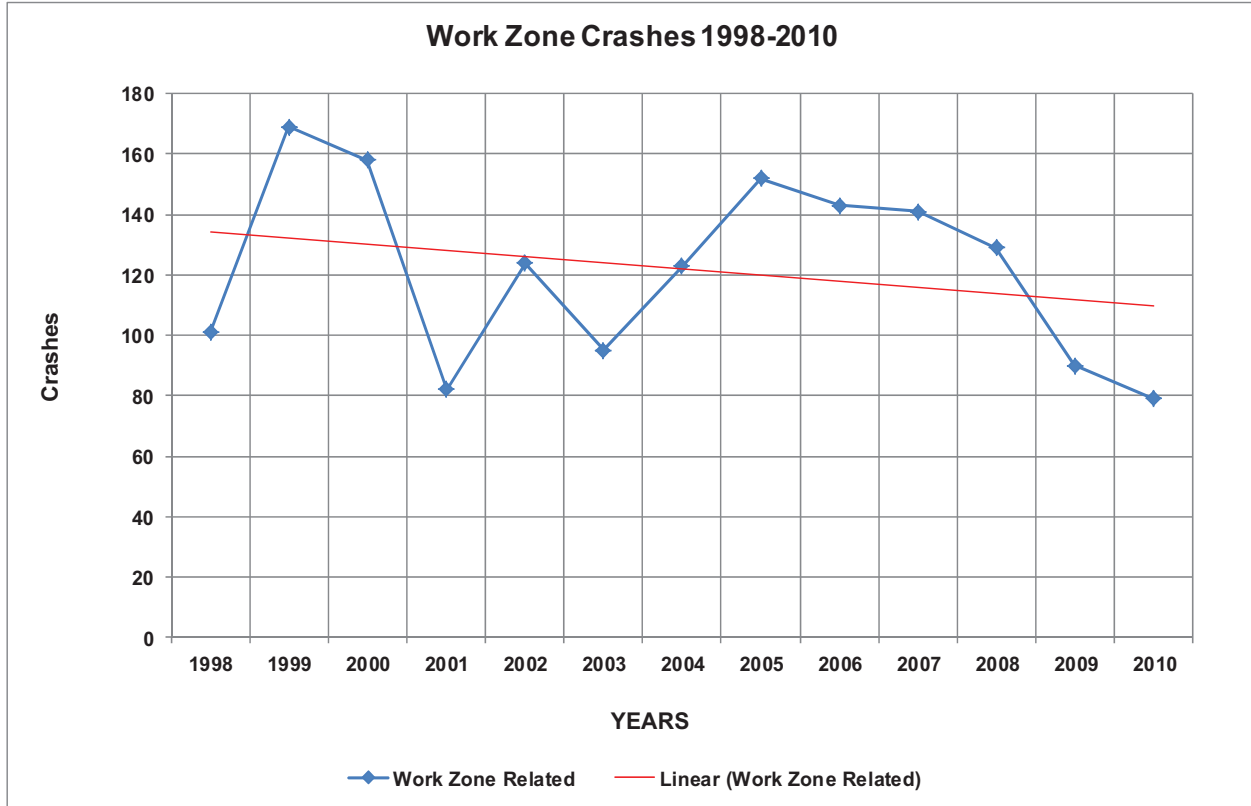
**Table 31: Type & Number of Motorcycle Crashes in the County 2009-2010**



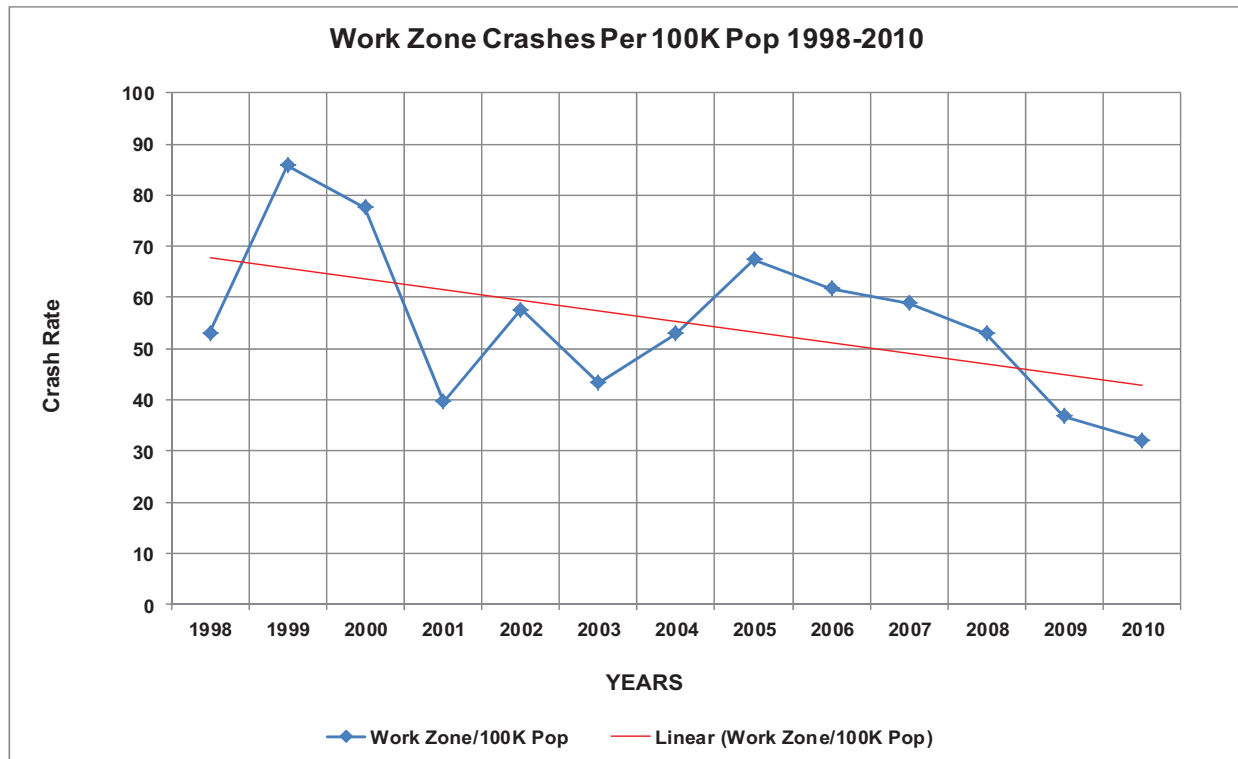
**Table 32: Percent of Motorcycle Operator Errors for County Crashes in 2010**



**Table 33: Work Zone Crashes in the County 1998-2010**

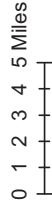


**Table 34: Work Zone Crashes Per 100K Population in the County 1998-2010**



**Safety Improvement  
Projects Completed  
in FY 2012**

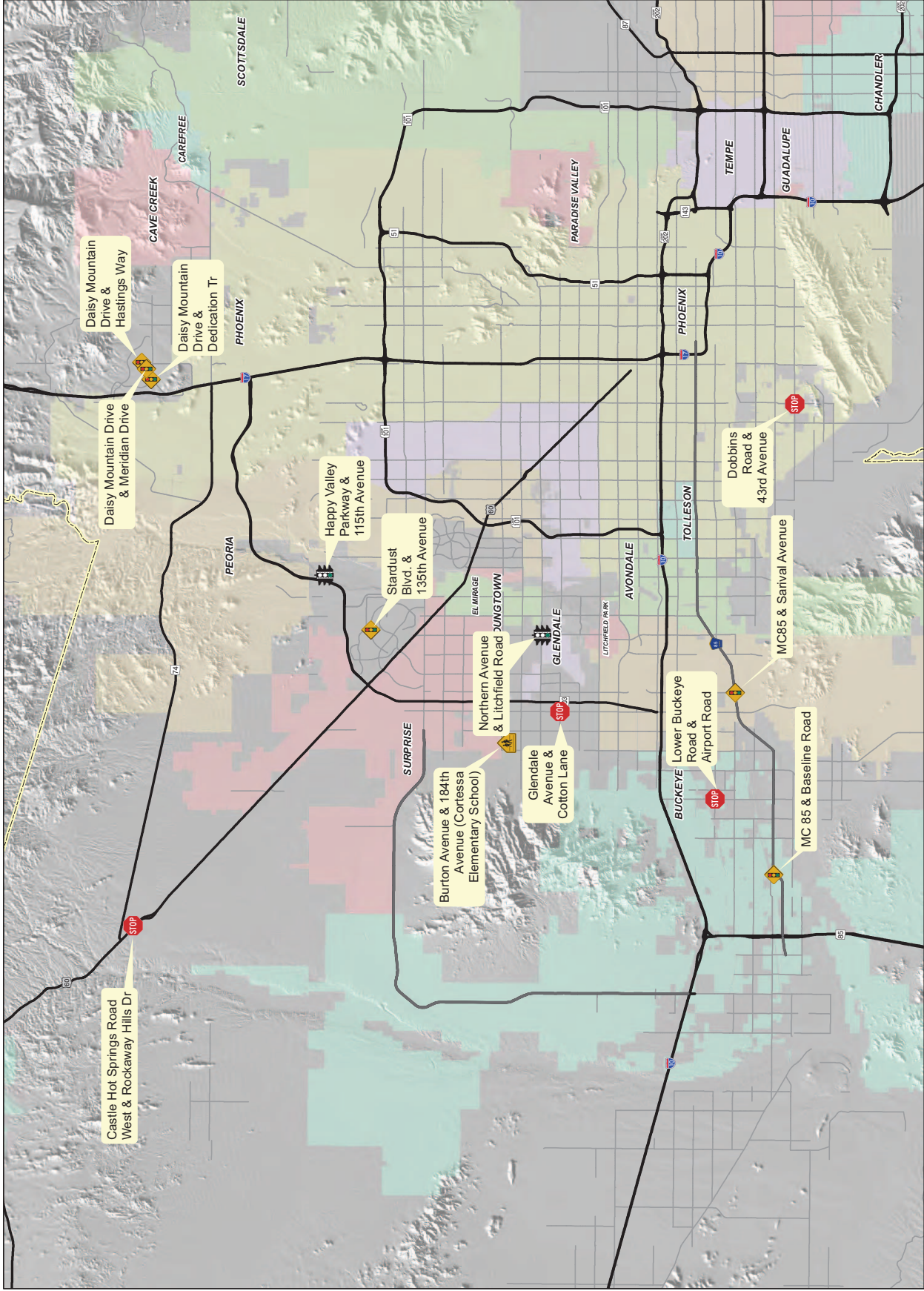
-  Multway Stop
-  New Signal
-  School Crossing
-  Signal Update
-  Maricopa County



Produced by the Maricopa County  
Public Works GIS Division




May 10, 2012

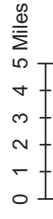
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**Planned Spot Safety Improvement Projects for FY 2013**

**Planned Spot Safety Improvement Projects For FY 2013**

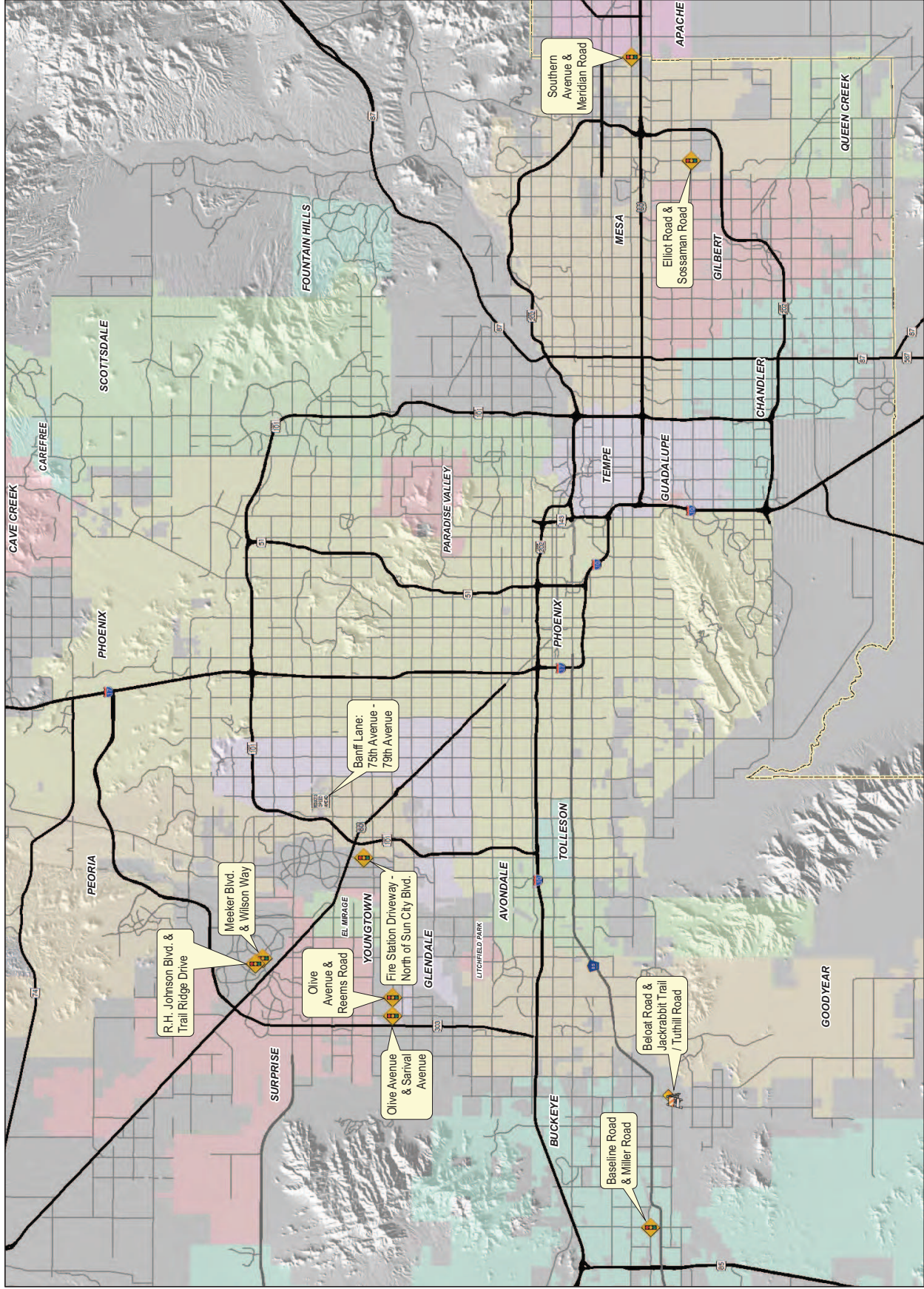
-  New Signal
-  Roadway Improvements
-  Traffic Calming



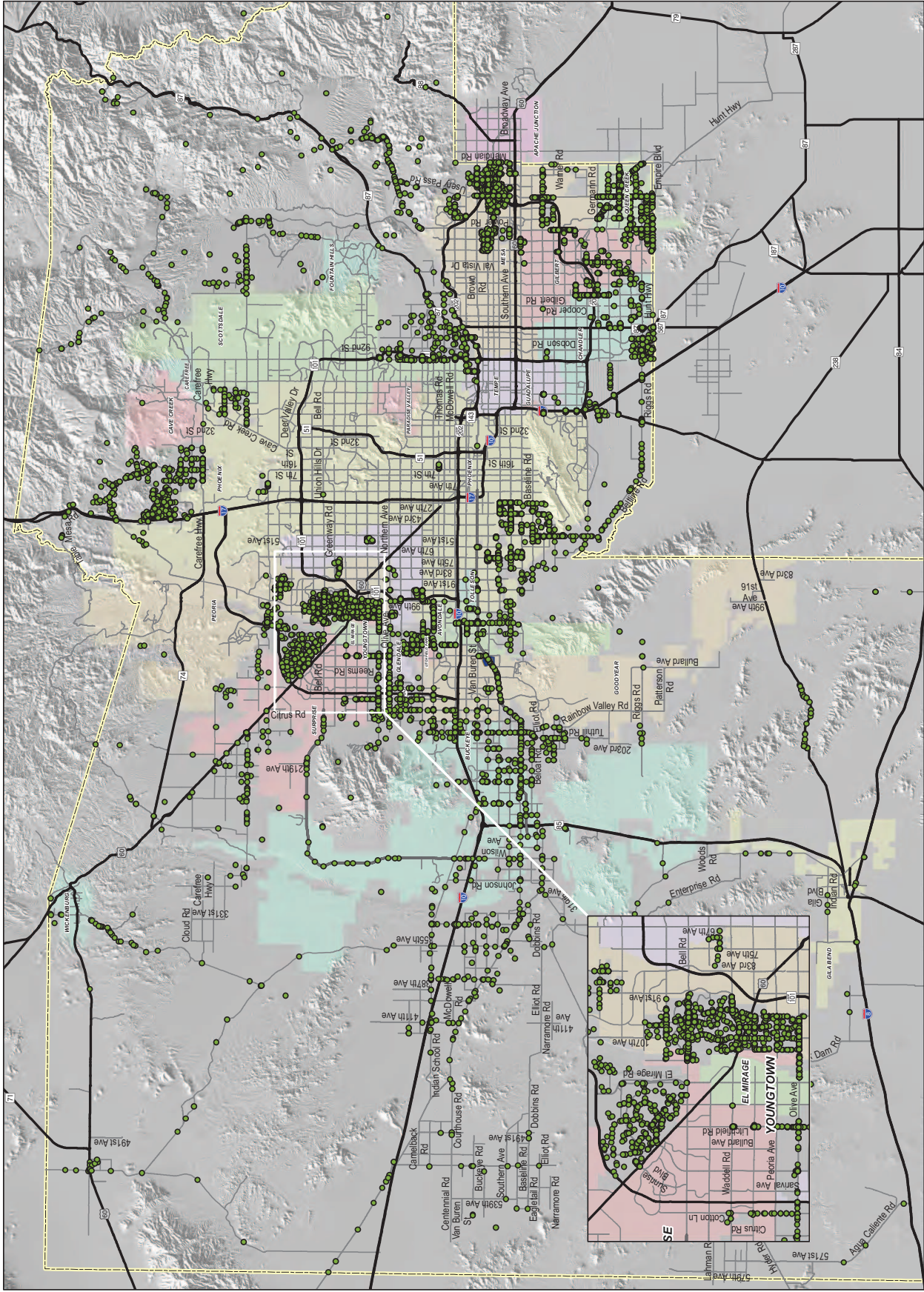
Produced by the Maricopa County  
Public Works GIS Division

May 10, 2012

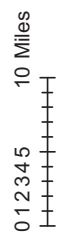
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# LOCATIONS OF ALL CRASHES 2007-2010



- Crashes 2007-2010
- State Highways
- Arterials
- Maricopa County



Produced by the Maricopa County  
Public Works GIS Division

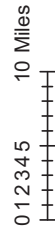
May 10, 2012

SMS 28



# LOCATIONS OF FATAL CRASHES 2007-2010

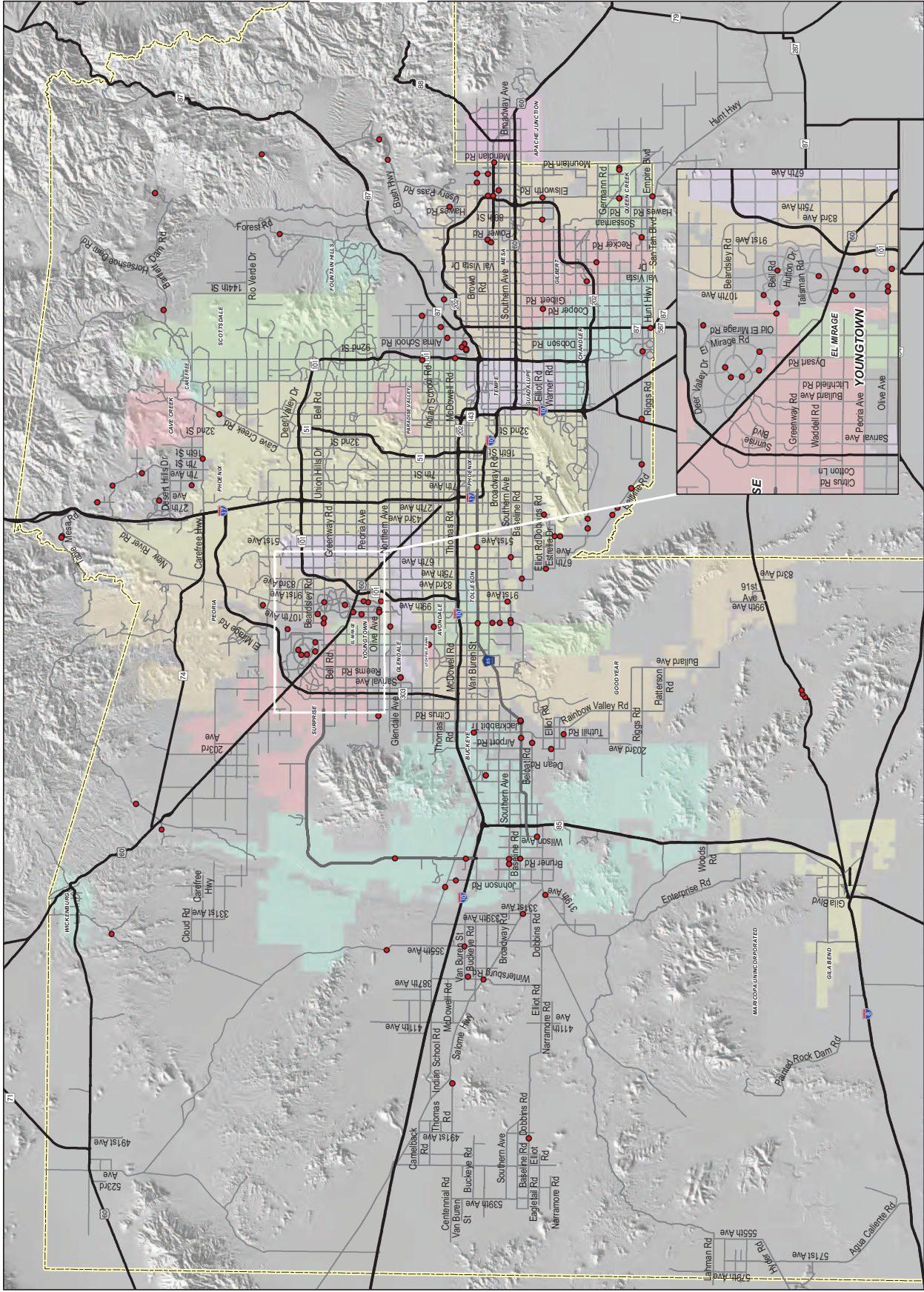
- Fatal Crashes 2007-2010
- State Highways
- Arterials
- Maricopa County



Produced by the Maricopa County Public Works GIS Division

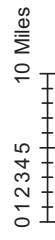
May 10, 2012

SMS 29



# LOCATIONS OF BICYCLE CRASHES 2007-2010

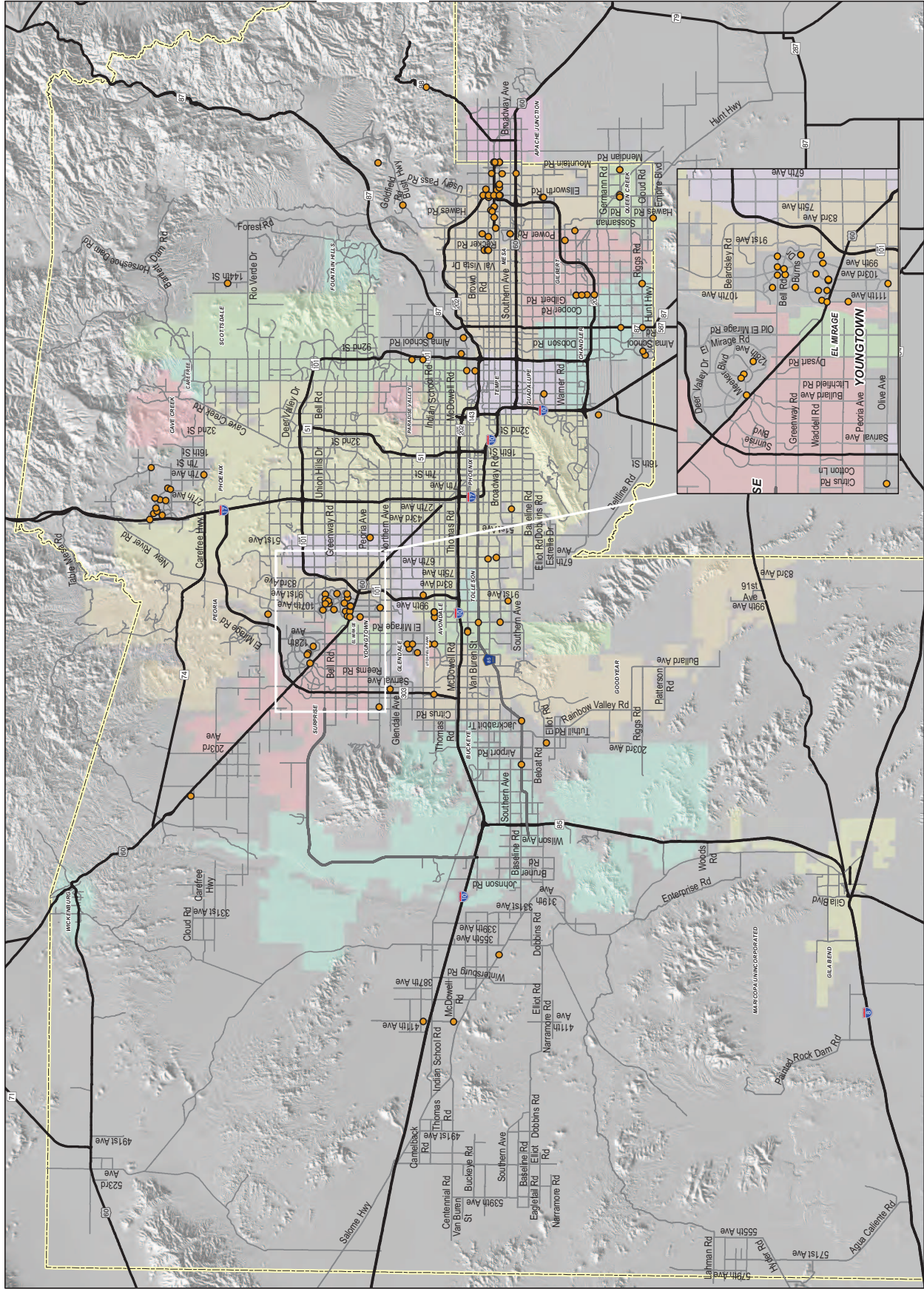
-  Bicycle Crashes 2007-2010
-  State Highways
-  Arterials
-  Maricopa County



Produced by the Maricopa County Public Works GIS Division

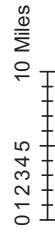
May 10, 2012

SMS 30



# LOCATIONS OF PEDESTRIAN CRASHES 2007-2010

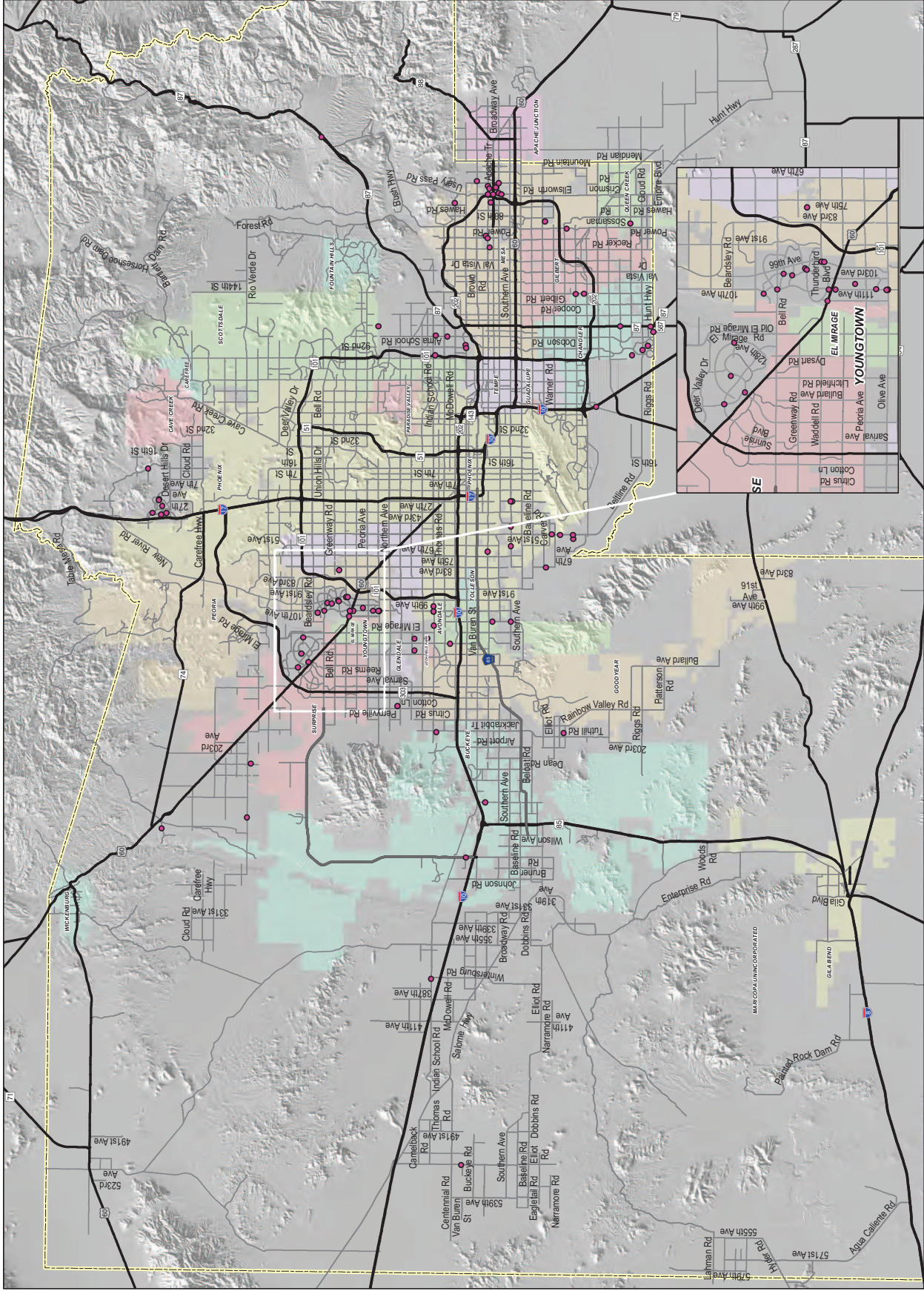
- Pedestrian Crashes 2007-2010
- State Highways
- Arterials
- ▭ Maricopa County



Produced by the Maricopa County Public Works GIS Division

May 10, 2012

SMS 31



# Low Volume Road Management System

**Fiscal Year 2012**



**Programming & System Analysis**



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## **LOW VOLUME ROAD MANAGEMENT SYSTEM**

The Maricopa County Department of Transportation (MCDOT) in FY 2000 initiated a formal program to pave low volume roads (LVR) in the County. A multi-year capital improvement program for paving low traffic volume dirt roadways was then created and implemented.

### **OVERVIEW**

This report documents the number and miles of low volume roads paved by MCDOT in Fiscal Year 2011. It also provides an historical picture of all MCDOT low volume road paving since 1983.

### **BACKGROUND**

Prior to 2004 MCDOT paved low volume roads primarily based on citizen complaints and field observations by MCDOT staff. However, beginning in 2004, MCDOT initiated a program to systematically identify low volume dirt roadways for paving. Unpaved roads with high or increasing traffic volumes, safety issues, or other significant concerns were to be considered for paving. This program was to specifically address those unpaved roads that do not meet federal criteria for paving under the PM-10 (federal dust abatement) program. The Maricopa County Transportation Advisory Board (TAB) recommended to the Board of Supervisors that an annual allocation of 3 to 4 million dollars per year be set aside to in the MCDOT annual budget to pave selected LVR's.

### **COUNTY ROADWAY SYSTEM**

In FY 2010 Maricopa County owned or maintained 2,353 miles of roadways. These roads are located in the unincorporated parts of the County, which includes both urban or near urban conditions as well as rural locations.

There are five different types of unpaved roads in Maricopa County:

- Roads that are owned by the County and identified as open and declared. This means the County owns right-of-way for these segments of road and has accepted the roadway into the County System.
- Roads that are partially opened and declared. These are roads where part of the right-of-way is owned by the County.
- Primitive roads. These roads are usually located in remote parts of the County and are accessing wilderness areas and are typically less developed than other areas.
- Courtesy grade roads. These roads are existing unpaved roads with little or no County owned right-of-way, but maintained by MCDOT through historical precedent and allowed by state statute.
- Unpaved roads not owned or maintained by the County.

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## Facts About County Unpaved Roads

- 803 miles of unpaved roads are within unincorporated Maricopa County.
- 166 of these miles are considered open and declared by the County.
- 218 of these miles are courtesy graded by the County.
- 7 of these miles are partially owned by the County.
- 360 of these miles are unpaved roads that are neither owned by the County nor courtesy graded by the County, but serve growing areas.
- 52 miles of these roads are primitive roads, accessing remote parts of the County.
- 597 road segments connect directly to a paved road.
- 230 miles of unpaved roads are inside the PM<sub>10</sub> area and 573 miles of unpaved roads are outside the PM<sub>10</sub> area.
- 164 miles of unpaved road segments are adjacent to or surrounded by an incorporated city or town boundary.

## TRANSPORTATION ADVISORY BOARD EVALUATION CRITERIA

A comprehensive inventory of the unpaved roads system builds on the updated base map and centerline file was created in 2008. Evaluation criteria was then inserted into the database for each unpaved road segment. The data for the evaluation criteria are important because they provide a descriptive picture of each unpaved road segment.

The criteria used by the TAB is listed below.

- The Board of Supervisor District the segment is located in.
- The length of the roadway segment (miles).
- Is the road segment located inside or outside the PM<sub>10</sub> area?
- Is the road segment County maintained or not?
- The Major Streets and Routes Plan classification.
- The average daily traffic count.
- Does the road segment connect to an existing paved road?
- The percent of estimated right-of-way owned by MCDOT.
- Does the segment serve a public facility?
- Are there any safety concerns (high accident rate for instance)?
- The cost per mile to pave.
- The total project cost.

### Additional Criteria

In addition to the TAB evaluation criteria, MCDOT staff collected data on the following information for each roadway segment:

- How many small washes cross the road segment?
- How many large washes or rivers cross the road segment?

- Are there any major utilities within close proximity?
- How many public facilities are in the vicinity of a given road segment.
- Crash data for a three year period.
- The general land ownership where the road segment is located.
- The distance to the nearest paved road.
- What is the nearest or adjacent city?



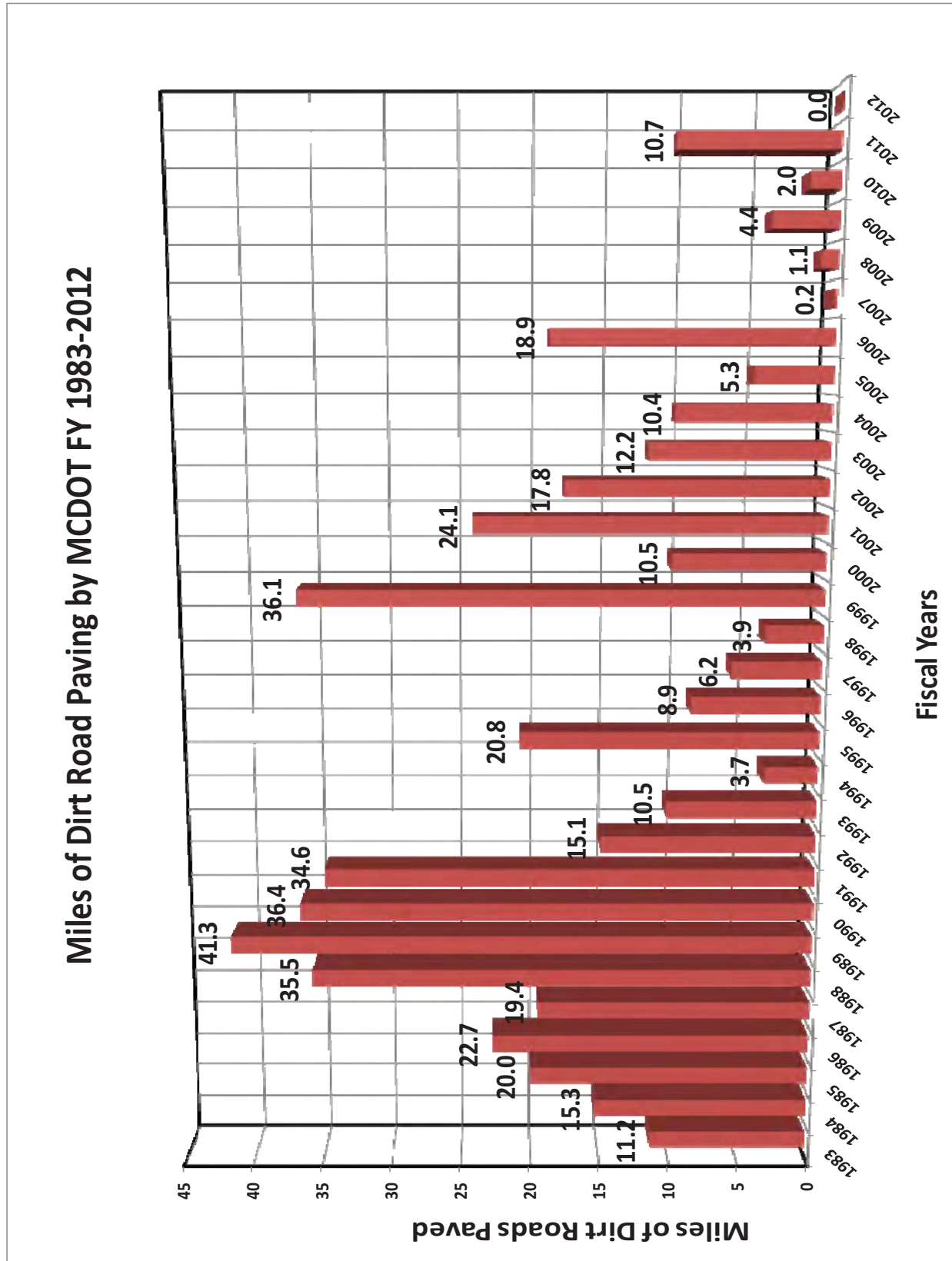
**Table 1: Low Volume Roads Completed or Underway in FY 2012**

<b>ROAD NAME</b>	<b>Length (ft)</b>	<b>WIDTH</b>	<b>SQ.YDS.</b>	<b>STATUS</b>
43rd Ave - Choppo Rd to Galveston St	581.60	24	1,550.94	To be bid in August 2012 (FY 2013)
45th Ave - Dusty Ln to Monterey St	485.81	24	1,295.50	To be bid in August 2012 (FY 2013)
45th Ave - Monterey St to Ivanhoe St	667.42	24	1,779.79	To be bid in August 2012 (FY 2013)
45th Ave - Ivanhoe St to Ivanhoe St	528.00	24	1,408.00	To be bid in August 2012 (FY 2013)
Choppo Rd - Dusty Ln to 43rd Ave	696.95	24	1,858.55	To be bid in August 2012 (FY 2013)
Dusty Ln - Galveston St to Choppo Rd	798.14	24	2,128.37	To be bid in August 2012 (FY 2013)
Galveston St - Dusty Ln to 43rd Ave	1,196.81	24	3,191.50	To be bid in August 2012 (FY 2013)
Ivanhoe St - 45th Ave to End of Road	1,232.23	24	3,285.94	To be bid in August 2012 (FY 2013)
Monterey St - 45th Ave to End of Road	930.11	24	2,480.29	To be bid in August 2012 (FY 2013)
	<b>7,117.08</b>		<b>18,978.89</b>	
<b>Miles</b>	<b>1.35</b>			
<b>ROAD NAME</b>	<b>Length (ft)</b>	<b>WIDTH</b>	<b>SQ.YDS.</b>	<b>STATUS</b>
191st Avenue - Jomax Road to Roadrunner Road	1,286.16	24	3,429.75	Design Completed Fall 2012 (FY 2013)
193rd Avenue - Jomax Road to Pinnacle Vista Alignment	3,912.17	24	10,432.46	Design Completed Fall 2012 (FY 2013)
Jomax Road - 207th Avenue to 203rd Avenue	2,556.77	24	6,818.05	Design Completed Fall 2012 (FY 2013)
Mitchell Road - Bradley Road to Radford Road	1,297.94	24	3,461.18	Design Completed Fall 2012 (FY 2013)
Roadrunner Road - 193rd Avenue to 191st Avenue	1,324.01	24	3,530.70	Design Completed Fall 2012 (FY 2013)
6th Street - BOM to EOM	3,288.58	24	8,769.55	Design Completed Fall 2012 (FY 2013)
7th Avenue - Saddle Mountain Road to EOM	792.00	24	2,112.00	Design Completed Fall 2012 (FY 2013)
16th Street - Honda Bow Road to Cavalry Road	2,607.31	24	6,952.83	Design Completed Fall 2012 (FY 2013)
22nd Street - Cavalry Road to EOM	916.63	24	2,444.33	Design Completed Fall 2012 (FY 2013)
Circle Mountain Road - 13th Avenue to 7th Avenue	2,568.96	24	6,850.56	Design Completed Fall 2012 (FY 2013)
Dove Valley Road - 10th Street to 12th Street	1,286.05	24	3,429.47	Design Completed Fall 2012 (FY 2013)
Peak View Road - 58th Street to 60th Street	1,333.58	24	3,556.21	Design Completed Fall 2012 (FY 2013)
Perdiz Drive - BOM to New River Road	541.52	24	1,444.05	Design Completed Fall 2012 (FY 2013)
Pinnacle Vista Drive - 40th Street to 42nd Street	1,277.03	24	3,405.42	Design Completed Fall 2012 (FY 2013)
Sabrosa Drive - New River Road to 6th Street	2,951.51	24	7,870.70	Design Completed Fall 2012 (FY 2013)
Saddle Mountain Road - New River Road to 12th Street	1,832.34	24	4,886.25	Design Completed Fall 2012 (FY 2013)
Venado Drive - New River Road to 6th Street	3,094.78	24	8,252.76	Design Completed Fall 2012 (FY 2013)
Watkins Street - Airport Road to 203rd Avenue	2,489.66	24	6,639.10	Design Completed Fall 2012 (FY 2013)
Watson Road - MC 85 to Buckeye Canal Service Road	1,289.56	24	3,438.84	Design Completed Fall 2012 (FY 2013)
	<b>36,646.58</b>		<b>97,724.21</b>	
<b>Miles</b>	<b>6.94</b>			

**Table 1: Low Volume Roads Completed or Underway in FY 2012 (continued)**

<b>ROAD NAME</b>	<b>Length (ft)</b>	<b>WIDTH</b>	<b>SQ.YDS.</b>	<b>STATUS</b>
016th St - Joy Ranch Rd to Tanya Rd	1,434.00	24	3,824.01	Design Completed Fall 2012 (FY 2013)
020th St - Tamar Rd to La Salle Rd	1,282.46	24	3,419.90	Design Completed Fall 2012 (FY 2013)
La Salle Rd - 16th St to 20th St	2,615.39	24	6,974.38	Design Completed Fall 2012 (FY 2013)
Tamar Rd - 16th St to 20th St	530.71	24	1,415.24	Design Completed Fall 2012 (FY 2013)
Tanya Rd - 16th St to 16th Pl	528.86	24	1,410.30	Design Completed Fall 2012 (FY 2013)
	<b>6,391.44</b>		<b>17,043.83</b>	
<b>Miles</b>	<b>1.21</b>			
<b>ROAD NAME</b>	<b>Length (ft)</b>	<b>WIDTH</b>	<b>SQ.YDS.</b>	<b>STATUS</b>
87th Ave: Deer Valley Rd to Williams Rd	2,640.00	24	7,040.00	Design Completed Fall 2012 (FY 2013)
<b>Miles</b>	<b>0.50</b>			
<b>ROAD NAME</b>	<b>Length (ft)</b>	<b>WIDTH</b>	<b>SQ.YDS.</b>	<b>STATUS</b>
105th St: Jensen St to McKellips Rd	1,330.00	24	3,546.67	Design Completed Fall 2012 (FY 2013)
McKellips Rd: 103rd St to 105th St	1,320.00	24	3,520.00	Design Completed Fall 2012 (FY 2013)
	<b>2,650.00</b>		<b>7,066.67</b>	
<b>Miles</b>	<b>0.50</b>			
<b>ROAD NAME</b>	<b>Length (ft)</b>	<b>WIDTH</b>	<b>SQ.YDS.</b>	<b>STATUS</b>
17th Ave: Maddock Rd to Joy Ranch rd	2,660.00	24	7,093.33	TT397-To be Bid Summer 2012 (FY 2013)
88th Ave: Deer Valley Rd to Williams Rd	2,690.00	24	7,173.33	TT397-To be Bid Summer 2012 (FY 2013)
	<b>5,350.00</b>		<b>14,266.67</b>	
<b>Miles</b>	<b>1.01</b>			
<b>Total Miles</b>	<b>11.51</b>			

Figure 1: MCDOT Dirt Road Paving History 1983-2012



# Bridge Management System

**Fiscal Year 2012**



**Programming & System Analysis**



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## **INTRODUCTION**

As of April 2012, Maricopa County maintains and inspects a total of 421 structures on public roads. By the Federal Highway Administration definition, 281 of these structures are qualified to be called “bridges” or “in-service” structures, meaning each of these has a length greater than 20 feet. The remaining 140 are called “off-system” structures, because their length is 20 feet or less.

## **DATA GATHERING AND ANALYSIS**

### **“In-Service” and “Off-System” Structures**

An “in-service” structure is described as one with an overall length greater than 20 feet, therefore qualifying the structure for Federal aid, while bridge/structures 20 feet or less in length are often called “off-system” or “non-Federal aid” bridges. However, every structure within MCDOT’s jurisdiction is inspected in accordance with the Federal Highway Administration’s National Bridge Inspection Standards Recording and Coding Guide. This procedure allows MCDOT to maintain thorough, consistent records on each bridge and structure in the County system. The decision to maintain and inspect all of MCDOT’s structures enables MCDOT to include off-system structures when considering how best to appropriate funds and prioritize in-house projects. Due to the comprehensive data MCDOT maintains on all structures, MCDOT is readily able to evaluate its inventory as a whole, rather than being restricted to information gathered only on the in-service structures.

## **EVALUATION CRITERIA**

In 1997 the Maricopa County Bridge Investment Study (BIS) recognized the need to evaluate bridges separately from roadway projects. The following information identifies MCDOT’s method of scoring and prioritizing bridge projects.

The following categories of bridge projects were chosen for evaluation and prioritization.

1. Replacement Projects
2. Replacement of Dip Sections with New Structures
3. Scour Protection Projects
4. New Bridge Projects (not included in major road projects)

## **REPLACEMENT OF EXISTING BRIDGES**

During 2011-2012, MCDOT did not replace any existing bridge structure. A bridge should be considered for replacement if all four of the following conditions are met:

1. The cost of rehabilitation is 55% or more than the cost of a new bridge.
2. The bridge is functionally obsolete.

3. The sufficiency rating is less than 50.
4. The Bridge Engineer agrees replacement is justifiable.

## **RECOMMENDATIONS FOR TIP PROGRAMMING PROCEDURES**

Each year, MCDOT reviews the highest rated bridge projects from the following subcategories:

1. TIP Projects
2. Replacement of Existing Bridges
3. Replace Dip Sections with New Structures
4. New Bridge Projects (not included in major road projects)

In any given year, the budget allocation may not support inclusion of all top rated bridge projects in the TIP Program. When this occurs, decisions are made based on the rating criteria and professional engineering judgment.

## **CURRENT STATUS OF THE MCDOT BRIDGE MANAGEMENT SYSTEM**

The MCDOT Bridge Management System is up-to-date, complete, and meets or exceeds all current Federal National Bridge Inspection Standards.

## **ASSET MANAGEMENT FOR BRIDGES**

In 2002, MCDOT began an Asset Management program for its bridge inventory. To date, MCDOT's bridge and structure inventory asset valuation is estimated at \$139,462,084.

### **SUMMARY OF THE 2011-2012 INSPECTION SEASON (8/1/11 to 6/30/12)**

In the 2011-2012 inspection season, MCDOT's bridge inventory consisted of 281 in-service structures and 140 off-system structures. There were no new structures added to the MCDOT inventory during this inspection season.

This year only one structure was annexed or otherwise removed from MCDOT's bridge inventory. A complete summary of the activity for the 2011-2012 inspection season is included at the end of this report.

## **FEDERAL FUNDING ELIGIBILITY COMPARISONS**

### **Structures Eligible for Federal Replacement Funds (SR < Than 50)**

The Federal Highway Administration guidelines stipulate that when a bridge's sufficiency rating falls below a score of 50, the bridge becomes eligible for Federal replacement funds. As of March 2011, Maricopa County had only one structure which had a rating below 50: the Gillespie Dam Bridge located on Old US 80 at the Gila



River. This structure was originally constructed in 1927 and is on the National Register of Historic Places (NRHP). It is the only steel truss bridge in the County.

Recognizing the value and importance in retaining and restoring this historical structure, MCDOT committed to rehabilitating this valuable asset. Construction began in the Fall of 2011 and was completed in the Spring of 2012.

The rehabilitation and restoration of the historically important Gillespie Dam Bridge across the Gila River will help ensure that the structure remains in service for future generations to both use and enjoy.

Upon completion of this project, the MCDOT bridge inventory had no structures with a sufficiency rating below 50.

### **Structures Eligible for Federal Rehabilitation Funds (Sufficiency Rating between 50 and 80)**

The Federal Highway Administration guidelines stipulate that when an in-service structure/bridge sufficiency rating falls between a score of 50 and 80, the bridge/structure becomes eligible for Federal rehabilitation funds. Currently, there are twenty-three structures in MCDOT's inventory that have sufficiency ratings between 50 and 80. Of these twenty-three, 23 are in-service structures that would qualify for Federal aid for rehabilitation.

After each inspection cycle the Bridge Engineer pays specific attention to all structures that had a significant change (ten points or more) in the sufficiency rating in order to determine what caused the change. Remedial action is taken as necessary. Table 1 lists the in-service structures in MCDOT's inventory that have sufficiency ratings between 50 and 80.

### **POTENTIAL FEDERAL FUND PROJECTS VS. OVERALL MCDOT INVENTORY**

In June 2011, the percentage of in-service structures in MCDOT's inventory that were eligible for Federal funds was 4%. In July 2012, the percentage of these structures in our inventory was 5%. The vast majority of structures in Maricopa County are still in excellent condition.

### **NOTABLE 2011-2012 BRIDGE EVENTS**

In July 2011, the Arizona Department of Transportation released a new version of their Bridge Design Guidelines. In an effort to provide uniform interpretation of the National Bridge Inspection Standards as published in the Code of Federal Regulations, 23 CFR 650, Subpart C, the new ADOT guidelines clarify bridge inspection procedures as well as documentation requirements. MCDOT bridge engineering staff has been diligently working to implement and meet the new procedures and documentation requirements.

**Table 1. Structures with Sufficiency Ratings between 80 and 50**

Structure No	Structure Name	Feature Carried by Structure	Deficiency	Sufficiency Rating
10516	Olive Avenue	Olive Ave RCB		80.00
9825	Carefree Hwy WB	Cave Creek Bridge		79.92
990128	MC-85	Drainage Ditch RCB		79.81
990276	Olive Avenue	Olive Ave RCB		79.52
990143	Sun Valley Pkwy-29	Wash RCB		78.99
9289	91st Ave	RID Canal RCB		78.08
8553	Alma School Rd	Salt River Bridge NB		77.60
8554	Alma School Rd	Salt River Bridge SB		77.60
9859	Camelback Rd	Agua Fria River Bridge		77.51
9145	Indian School Rd	Agua Fria River Bridge		76.86
990158	Camelback Rd	Agua Fria Drain RCB		76.51
9126	Bell Rd	Drainage Ditch RCB		76.43
9375	Broadway Rd EB	Tempe Canal Bridge EB	Functional	76.31
9384	Broadway Rd WB	Tempe Canal Bridge WB	Functional	76.31
990164	Cotton Lane	Drainage Ditch RCB		74.97
10084	Circle Mtn Road	Cline Creek RC Arch		73.63
10405	Anthem Way	Anthem Way RCB		73.05
7780	Gilbert Rd-FAS 229	Salt River Bridge		72.63
990169	El Mirage Rd	Drainage Ditch RCB		69.86
8570	RH Johnson Blvd	Drainage Ditch RCB		69.65
990172	Indian School Rd	Beardsley Canal Bridge		68.87
990121	Queen Creek Rd	RWCD Canal RCB		65.77
990181	Old US 80	Arlington V Wash Bridge	Structural	64.79

The completion of the Gillespie Dam Bridge restoration and rehabilitation project was the most notable accomplishment during 2011-2012. This structure is the only MCDOT owned bridge that is listed in the National Register of Historic Places (NRHP). Federal aid was used to finance the rehabilitation cost. The completed project significantly increased the service life-span of the structure.

**SYNOPSIS OF MCDOT’S BRIDGE PROJECTS**

**Bridge Projects in the MCDOT FY 2013-2017 TIP**

Currently, MCDOT has seven bridge and structure projects in the TIP. These projects include bridge project scoping and new bridge designs. Refer to Table 2 for a list of the projects.

**Table 2. Bridge Projects in the MCDOT FY 2013 – 2017 TIP**

STATUS	FEATURE	FACILITY/ FACILITIES	LOCATION	IMPROVEMENT
FY 2013 to 2017	Agua Fria River	Deer Valley Rd Bridge	El Mirage Rd to Lake Pleasant Rd	Prepare Final Design
FY 2013 to 2017	Salt River	Gilbert Road Bridge	At Salt River	Bridge Replacement Final Design
FY 2012 to 2013	BID Canal	Miller Road Bridge	At BID Canal	Prepare Final Design
FY 2013 to 2017	Salt River	Dobson Road and McKellips Road Bridges	At Salt River	Prepare Final Design
FY 2013 to 2017	Queen Creek Wash	Meridian Road Bridge	At Queen Creek Wash	Prepare Final Design
FY 2013 to 2017	Tiger Wash	Eagle Eye Road Bridge	At Tiger Wash	Initial Scoping
FY 2013 to 2017	Salt River	75th Avenue Bridge	At Salt River	Initial Scoping

**Status of Bridge/Structure Projects Completed in FY 2011 (July 1, 2011 – June 30, 2012)**

Five bridge/structure projects were completed in FY 2012, as listed below in Table 3.

**Table 3. Structure Projects Completed in FY 2012  
Status of Bridge & Structure Projects Currently Under Construction**

PROJECT LOCATION	DESCRIPTION OF WORK COMPLETED
Ellsworth Rd Improvements	Two New Box Culverts and One Culvert Widening and Extension completed
Old US80 at the Gila River	Gillespie Dam Bridge Rehabilitation and Restoration completed
Indian School Road RCB at the Beardsley Canal	Construction Plans finalized
Old US80 at the Gila River	Scour Plan of Action Report completed
Gilbert Road Bridge at the Salt River	Scour Plan of Action Report completed

There are several Flood Control District structures currently under construction, including a significant bridge at Riggs Road at Sonoqui Wash, which will eventually be owned and maintained by MCDOT. Table 4 lists the bridge projects currently under construction by MCDOT.

**Table 4. Bridge Projects Under Construction by MCDOT**

PROJECT LOCATION	WORK DESCRIPTION
Indian School Road at the Beardsley Canal	Existing bridge removed and new culvert constructed

**Status of Bridge & Structure Projects Currently Being Designed**

There are currently seven bridge projects in various stages of design by MCDOT, as well as numerous structure projects within private developments in the design phase. Table 5 lists the bridge projects currently under design or in the Design Concept Report (DCR) or scoping process.

**Table 5. Projects Currently in the Design Phase by MCDOT**

NAME	FACILITY	STATUS
Deer Valley Road Bridge	Agua Fria River	Construction Plans in progress.
Dobson Road Bridge and McKellips Road Bridge	Salt River	Design Concept Report completed.
Gilbert Road Bridge	Salt River	Design Concept Report completed.
75th Avenue Bridge	Salt River	Initial Scoping in progress.
Miller Road Bridge Rehabilitation	BID Canal	Construction Plans in progress.
Eagle Eye Road Bridge	Tiger Wash	Initial Scoping in progress.
Meridian Road Bridge	Queen Creek Wash	Design Concept Report completed.

**Table 6. SUMMARY OF ACTIVITY FOR THE 2011–2012 BRIDGE INSPECTION SEASON**

Each year MCDOT must report to the Maricopa County Board of Supervisors concerning the physical condition of its bridges and structures as compared to the adopted criteria as required by the Governments Accounting Standards Board Statement 34. The latest ratings of the County’s bridges and structures along with the bridge sufficiency ratings (BSR) are shown below.

**Summary of Structures for the 2011 - 2012 Inspection Season**

CRITERIA	TARGET VALUE	ACTUAL VALUE
% of Bridges and Structures with BSR > 70	min. 90%	98.8%
% of Bridges & Structures with BSR < 50	max. 3%	0.0%

**Summary of Structures for the 2011 - 2012 Inspection Season**

**Total number of structures in inventory: 421**

Number of Federal Structures:	281
Number of Non-Federal Structures:	140
Number of bridges:	82
Number of culverts:	339

**Total number of new structures added to database this year: 0**

**Total number of Federal structures added to database this year: 0**

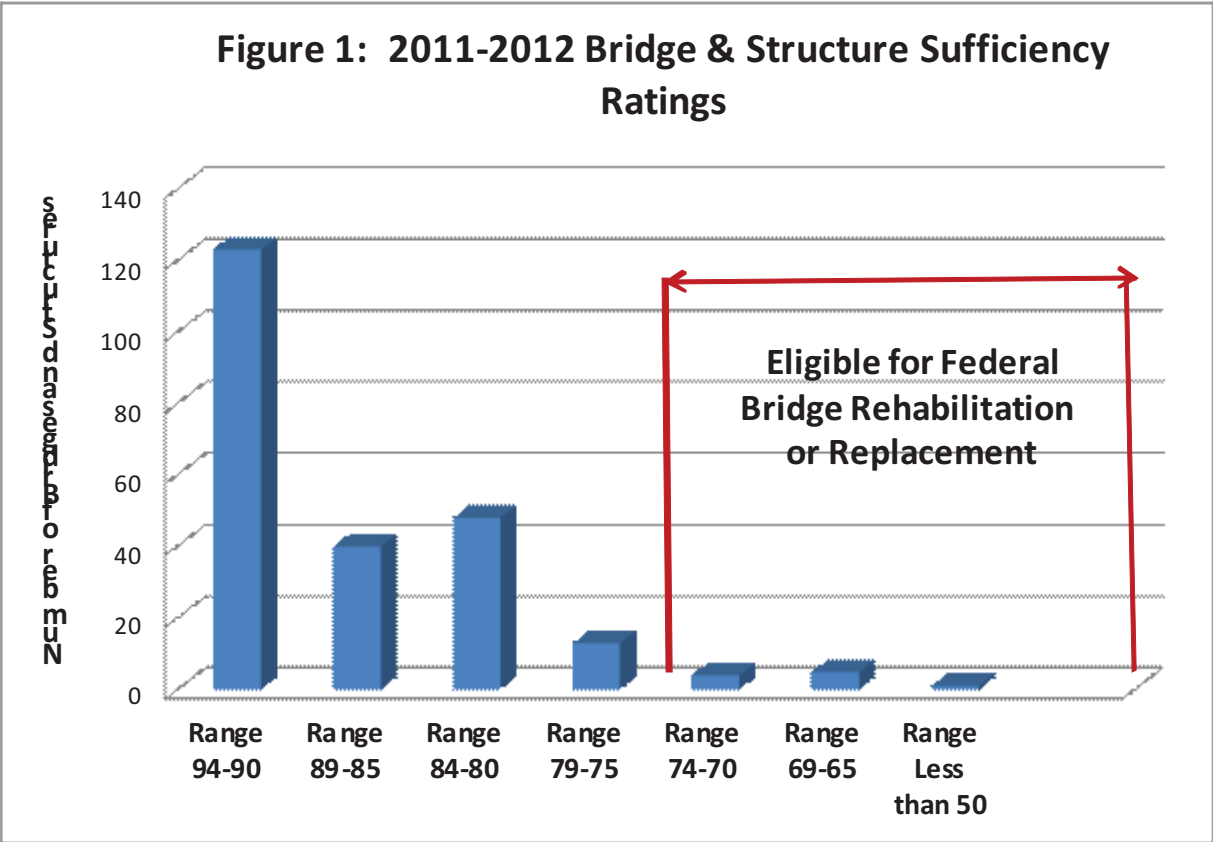
**Total number of non-Federal structures added to database this year: 0**

**Total number of structure replacements made this year: 0**

**Total number of structures removed/annexed from database this year: 2**

Dysart Road Bridge at RID canal SN 9412 (Annexed by Avondale)  
Indian Springs Rd Pedestrian Crossing RCB at PIR SN 990216 (Annexed by Avondale)

**Figure 1: 2011-2012 Bridge & Structure Sufficiency Ratings**



**Table 7. Alphabetical Listing of All Structures in the MCDOT Bridge**

Structure No.	Roadway	Location	Feature Intersected	Sufficiency Rating
10050	007th St	0.2 mi N/ 7th St/Carefree	Desert Lake Wash	97.98
10051	007th St	450' N/ Carefree Hwy	Desert Lk Wash S Branch	97.98
10553	012th Street	N of Circle Mtn Rd	Wash	99.98
8583	059th Ave	0.5 mi S/ Buckeye Rd	RID Canal	97.65
9289	091st Ave	at McDowell Rd	RID Canal	78.08
10444	096th Street	1/8 mi N/ Broadway Road	Wash	99.64
990151	099th Ave	200' N/ Grand	Drainage Ditch	95.73
990153	099th Ave	at Concho Circle	Drainage Ditch	96.02
9666	099th Ave	250' N Grand Ave	Drainage Ditch	96.41
9672	099th Ave	0.5 mi N/ McDowell Rd	RID Canal	98.08
990154	103th Ave NB	325' N/ Olive	Drainage Ditch	96.72
9677	105th Ave	at Del Webb Blvd Median	Drainage Ditch	96.94
990234	105th Place	Quarterline Rd to Contess	Drain Ditch	96.94
9678	106th Ave	at Del Webb Blvd Median	Drainage Ditch	96.94
9679	107th Ave	at Del Webb Blvd Median	Drainage Ditch	96.62
990257	107th Avenue	0.5 mi. N of Williams Rd	Wash	98.62
990280	116th Street	600' S of Riggs Rd	Consolidated Canal	93.59
10783	117th Avenue	620' S/ Agua Fria Blvd	Wash	92.42
990265	119th Avenue	0.5 mi s/ Williams Drive	Drainage Ditch	90.5
10368	129th Avenue	N/ Camelback Rd	Drainage Channel	96.93
7561	138th Ave	200' W/ Camino del Sol	Drainage Ditch	96.95
990202	141st Ave	200' W/ Yosemite Dr	Drainage Ditch	96.95
10552	144th St-Rio Verde	120' S of Dixileta Dr	Wash	81.82
10554	144th St-Rio Verde	350' S of Peakview Rd	Wash	81.82
10555	144th St-Rio Verde	1250' S of Dixileta Dr	Wash	81.82
10556	144th St-Rio Verde	at Windstone Trail	Wash	81.82
990203	145th Drive	200' W/ Yosemite Dr	Drainage Ditch	96.95
990204	147th Drive	200' N/ Antelope	Drainage Ditch	96.95
10849	150th Street	765' N of Rio Verde Drive	Wash	86.83
10850	150th Street	1610' N of Rio Verde Dr	Wash	86.83
8571	163rd Avenue	5 mi N/ US 60_Grand Ave	HaydenRhodes CAP Aque- duct	89.21
11109	203rd Place		Sonoqui Wash	NEW
7582	309th Avenue	S of Lower River Rd	Buckeye Canal	94.85
8576	355th Avenue	7 mi N/ Indian School Rd	CAP Canal	96.99
7548	571st Ave_AguaCal	9.75 mi N/ I-8 via ACRd	Gila River	98.55
990156	571st Ave_AguaCalR	8.5 mi N/ I-8 via AguaCal	Wash	95.55
8001	Airport Rd	0.5 mi N/ Lower Buckeye	RID Canal	94.84
10126	Airport Rd	1 mi N/ MC85	Buckeye Canal	98.6
7549	Aleppo Drive	200' N/136th Dr_W/SpnGrdn	Drainage Ditch	96.73
8553	Alma School Rd	300' S/ McKellips	Salt River(N.Channel)	77.6



Structure No.	Roadway	Location	Feature Intersected	Sufficiency Rating
8554	Alma School Rd	0.25 mi N/ McLellan	Salt River(S.Channel)	77.6
990117	Alma School Rd	0.5 mi S/ Riggs Rd	golf cart underpass	99.63
990187	Amigo Dr (SCW)	at Stardust Blvd Median	Drainage Ditch	95.06
10405	Anthem Way	East of I-17	Wash	73.05
990230	Anthem Way	350' W/ Anthem Club Dr	Ped X	80.67
990228	Anthem Way	475' E/ Venture Court	Wash	95.53
990227	Anthem Way	530' E/ Navigation Way	Wash	95.9
990229	Anthem Way	200' W of Anthem Club Dr	Wash	95.9
990231	Anthem Way	220' E/ Freedom Way	Wash	95.9
990232	Anthem Way	.25 mi W/ Daisy Mtn Dr	Wash	96.44
990250	Anthem Way	370' NW of LibertyBellWay	Wash	96.44
990258	Anthem Way	0.53 mi E/ Daisy Mtn Dr	Wash	96.51
990259	Anthem Way	0.4 mi E/ Daisy Mtn Dr	Wash	96.51
10551	Anthem Way	0.89 mi E/ Daisy Mtn Dr	Wash	99.51
990184	Aurora Dr	at Stardust Blvd Median	Drainage Ditch	97.84
10163	Avondale Blvd	0.75 mi S/ Southern Ave	Gila River	84.63
990185	Ballad Dr	at Stardust Blvd Median	Drainage Ditch	97.84
8000	Baseline Rd	200' NW MC-85	Buckeye Canal	93.68
8555	Beardsley Rd	100' E/ 125th Ave	Drainage Ditch	97.36
990272	Belfair Way	just N of Meridian Drive	Wash	89.38
9126	Bell Rd	at 99th Ave	Drainage Ditch	76.43
9686	Bell Rec Center Dr	at 99th Ave Median	Drainage Ditch	96.63
990157	Beloat Rd	E/ Rainbow Rd	Buckeye Canal S. Branch	88.93
990243	Bethany Home Rd	350' E of 137th Ave	wash	85.53
990244	Bethany Home Rd	418' W of 135th Ave	Wash	85.53
10512	Bethany Home Rd	200' E of 125th Ave	Wash	96.81
9676	Boswell Blvd	at Del Webb Blvd Median	Drainage Ditch	96.76
9687	Boswell Blvd	at 99th Avenue Median	Drainage Ditch	99.81
990101	Broadway Rd	at Meridian Rd.	Drainage Ditch	96.21
990102	Broadway Rd	1000' E/ Crismon Rd	Drainage Ditch	96.21
8975	Broadway Rd	400' W/ FanninMcFar CAP	Drainage Ditch	97.33
9375	Broadway Rd EB	0.2 mi E/ Price Rd	Tempe Canal	76.31
9384	Broadway Rd WB	0.2 mi E/ Price Rd	Tempe Canal	76.31
8855	Bruner Rd	0.75 mi N/ Old US-80	Buckeye Canal	98.98
9688	Burns Drive	at 99th Avenue Median	Drainage Ditch	99.57
9763	Bush Hwy	3.2 mi N/ McDowell Rd	Spook Hill Fldwy	86.21
9849	Bush Hwy	at Blue Point-Salt River	Salt River	91.77
990113	Bush Hwy	3.25 mi N/ McDowell Rd	Wash	95.63
9824	Bush Hwy	1.7 mi N/ Thomas	FanninMcFar CAP Aque- duct	96.96
7779	Bush Hwy-FAS 388	3.5 mi N/ McDowell Rd	Wash	95.63

Bridge Management System

Structure No.	Roadway	Location	Feature Intersected	Sufficiency Rating
990158	Camelback Rd	0.5 mi E/ El Mirage Rd	Drainage Ditch	76.51
9859	Camelback Rd	1.0 mi E/ El Mirage Rd	Agua Fria River	77.51
9689	Cameo Dr	at 99th Avenue Median	Drainage Ditch	96.86
10159	Carefree Highway	0.5 mi W/ 24th Street	Wash	96.78
10160	Carefree Highway	0.25 mi E/ 24th Street	Wash	96.78
10161	Carefree Highway	0.5 mi E/ 24th Street	Apache Wash	96.78
10158	Carefree Highway	W/ 16th Street	Wash	98.93
9891	Carefree Hwy	at 10th St	Wash	98.54
9892	Carefree Hwy	200' W/ 12th St	Wash	98.54
9893	Carefree Hwy	200' W/ 24th St	Wash	98.54
10162	Carefree Hwy EB	1 mi W/ Cave Creek Rd	Cave Creek Wash	97.4
9825	Carefree Hwy WB	1 mi W/ Cave Creek Rd	Cave Creek Wash	79.92
990269	Carlota Lane	313' W of 119th Avenue	Drainage Ditch	98.89
990256	Castano Drive	just N. of Bethany Home R	Wash	96.81
7550	Cavalcade Drive	200' E/ 141th Ave	Drainage Ditch	96.73
7898	Cave Creek PKWY	1.5 mi N/32nd St/Cloud Rd	Wash	98.84
11111	Centennial Rd	5.7 mi W/ Harqua. Val. Rd	CAP Aux Canal	98.84
10240	Chambers Street	0.6 mi S/ Broadway Rd	Buckeye Feeder Ditch	98.99
990116	Chandler Hts Rd	0.5 mi E/ SR-87 (AZ Ave)	Consolidated Canal	97.2
990218	Cicero Street	E/ 105 St & N/ Univ Dr	Drain Ditch	96.95
10084	Circle Mtn Road	3437' E/ New River Rd	Wash	73.63
10229	Citrus Road	just N/ Northern Ave	Wash	80.68
10520	Clarendon Avenue	just W/ 195th Ave	Drain Ditch	92.34
990261	Clearview Trail	just N/ Meridian Dr	Wash	81.73
990236	Cloud Rd	1000' W/ 32nd Dr	Wash	84.82
990235	Cloud Rd	just E/ Via Puzzola	Wash	87.46
10443	Cloud Road	500' W of 32nd Drive	Wash	86.72
990163	Conquistador Dr	200' S/ Beechwood	Drainage Ditch	86.9
990162	Conquistador Dr	200' E/ Regal	Drainage Ditch	96.86
990107	Coralbell Ave	E/ Ellsworth & S/Broadway	Drainage Ditch (Wash)	96.85
990164	Cotton Lane	N/ Camelback Rd	Drainage Ditch	74.97
10630	Cotton Lane	0.25 mi S/ MC-85	Buckeye Canal	98.91
10629	Cotton Lane	1mi. S/ MC-85	Gila River	99.91
10062	Cottonwood Rd	N Entrance Lk Plsnt Pk	Cottonwood Creek	87.58
9736	Courthouse Rd	3 mi W/ Salome Rd	Saddleback Diversn Chn	98.49
8761	Crismon Rd	0.25 mi N/ Brown Rd	Signal Butte Fldwy	84.74
8856	Crismon Rd	500' N/ Apache Rd	CAP Canal	94.47
990247	Daisy Mtn Dr RCB	0.52 mi S of Anthem Way	Wash	91.48
10557	Daisy Mtn Drive	92' E of Dedication Trail	Wash	83.38
10558	Daisy Mtn Drive	750' E/ Dedication Trail	Wash	83.38

Structure No.	Roadway	Location	Feature Intersected	Sufficiency Rating
10559	Daisy Mtn Drive	0.36 mi NE/ Dedication Tr	Wash	83.38
10519	Daisy Mtn Drive	0.6 mi S of Anthem Way	Wash	91.48
10627	Daisy Mtn Drive	0.4mi W/Gavilan Pk Pkwy	Wash	95.67
10628	Daisy Mtn Drive	520' W/GavilanPk Pkwy	Wash	95.67
990266	Daley Lane	just e/ 123rd Avenue	Drainage Channel	96.89
7551	Dean Rd	600' N/ Lower Buckeye Rd	RID Canal	98.66
8638	Dean Rd	0.75 mi N/ MC-85	Buckeye Canal	98.8
10044	Deer Valley Dr	W/ 135th Ave	Golf Cart Path (SCW)	85.28
990166	Deer Valley Dr	E/ Veterans	Golf Cart Path	85.63
990165	Deer Valley Dr	W/ Dustytrail Blvd (SCW)	Golf Cart Path	96.37
990167	Deer Valley Dr	W/ Acapulco Drive	Golf Cart Path	96.67
11071	Deer Valley Drive	Just N/ exist Deer Valley Dr	Deer Valley Channel	81.61
990168	Desert Glen Dr	100' N/ 132nd Ave	Drainage Ditch	82.86
990224	Dysart Rd	N/ Camelback Rd	Drain Channel	95.38
7883	Dysart Rd-FAS 547	0.25 mi N/ Camelback Rd	Colter Channel	98.38
10787	Dysart Road	0.25 mi. S/ Jomax Rd	Beardsley Canal	99.92
8560	Eagle Eye Rd	2 mi S/ Salome Hwy	CAP Canal	97.9
10784	El Granada Blvd	0.18 mi. S/ Jomax Rd	Drainage Channel	96.93
10785	El Granada Blvd	0.42 mi. N/HappyValley Rd	Drainage Channel	99.96
10786	El Granada Blvd	0.4 mi. N/ HappyValley Rd	Beardsley Canal	99.96
990169	El Mirage Rd	0.25 mi S/ Beardsley	Drainage Ditch	69.86
990279	El Mirage Rd	600' S. of Loop 303	Pinnacle Pk Drain Channel	81
8561	El Mirage Rd	N/ Bell Rd	Drainage Ditch	83.36
11105	El Mirage Rd	1.7 mi N. of Bell Road	McMicken Dam Outlet Wash	94.05
11106	El Mirage Rd	3.4 mi. N. of Bell Road	McMicken Dam Outlet Wash	94.05
9949	El Mirage Rd	0.5 mi N/ Glendale Ave	Dysart Drain	97.34
9586	Elliot Rd	at Sossaman	Sossaman Ditch	94.2
9842	Ellsworth	200' S/ Apache Trail	Drainage Ditch	99.04
11107	Ellsworth Rd		Sonoqui Wash East Branch	84
9138	Ellsworth Rd	Empire Blvd_PinalCo Line	Sonoqui Wash	93.25
9895	Ellsworth Rd	0.25 mi N/ University Rd	CAP Canal	99.15
7899	Ellsworth-FAU 7077	400' N/ Broadway	Wash	99.04
10367	Forest Rd	1.4 mi N/ McDowell Mtn Rd	Small Wash	93.85
10366	Forest Rd	1.3 mi N/ McDowell Mtn Rd	Large Wash	95.74
990223	Forest Road	1.3 mi N/McDowell Mtn Rd	golf cart crossing	84.41
10104	Fort McDowell Road	just N/ Yavapai Rd	Wash	99.59
8019	Ft McDowell Rd	2.25 mi N/ SR 87	Wash	86.57
10397	Gavilan Peak Pkwy	W/ Navigation Way	Wash	81.61
990233	Gavilan Peak Pkwy	1600' E/ Navigation Way	Wash	83.54
10582	Gavilan Peak Pkwy	just S of Daisy Mtn Dr	Deadman Wash	94.19

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Structure No.	Roadway	Location	Feature Intersected	Sufficiency Rating
10855	Gavilan Peak Pkwy	840' N of Daisy Mtn Drive	Wash	95.96
10384	Gavilan Peak Pkwy	300 ' N. King Drive	Wash	96.37
11005	Gavilan Peak Pkwy	0.5 mi N of Pioneer Rd	Wash	97.27
11070	Gavilan Peak Pkwy	just N. of Jordan Lane	Wash	98.66
7554	Gemstone Drive	200' W/ 136th Dr_SCW	Drainage Ditch	89.29
10276	Germann Road	.25 mi E/ Sossaman Rd	Drainage channel	89.84
7780	Gilbert Rd-FAS 229	0.5 mi N/ Thomas Rd	Salt River	72.63
990170	Granite Valley Dr	200' N/ Antelope Dr (SCW)	Drainage Ditch	96.41
8562	Greenway Rd	at 99th Ave	Drainage Ditch	88.41
10396	Happy Valley Pkwy	1.5 mi W/LkPleasant Rd	Agua Fria River	85.78
10457	Happy Valley Pkwy	2.06 mi w/ Lake Pleasant Rd	Wash	91.32
10458	Happy Valley Pkwy	1.65 mi W/Lake Pleasant Rd	Wash	91.32
11006	Happy Valley Road	0.7 mi E of Dysart Rd	Trilby Wash	96.55
990249	Hastings Way	250' SE of Hickcock Trail	Wash	96.78
990254	Hastings Way	250' SW of Blaze Court	Wash	96.78
990255	Hastings Way	277' NW of Blaze Court	Wash	96.78
10518	Hemingway Lane	just E of Dedication Trail	Wash	89.34
10581	High Noon Way	just N of Kuralt Drive	Wash	96.89
9503	Higley Rd	0.5 mi S/ Germann	RWCD Canal	92.31
9668	Hutton Drive	at 99th Ave Median_SCW	Drainage Ditch	99.68
10085	I-17 Frontage Rd	1000' S/ New River Rd	New River	88.32
8640	I-17 Frontage Rd	0.7 mi S/ New River	Wash	96.62
990213	I-17 Frontage Rd	S/ Meander Rd	Wash	99.58
990172	Indian School Rd	at 191st Ave	Beardsley Canal	68.87
9145	Indian School Rd	0.5 mi E/ El Mirage	Agua Fria River	76.86
990225	Indian Springs Rd	W/ El Mirage Rd	Wash	97.72
990260	Iron Horse Way	just N/ Meridian Dr	Wash	89.38
10088	Jackrabbit Trail	0.25 mi N/ Yuma	RID Canal	97.12
990175	Jackrabbit Trail	0.25 mi S/ SR-85	Buckeye Canal S. Branch	97.76
9831	Jackrabbit Trail	1000' N/ Southern Ave	Buckeye Canal	98.33
8680	Johnson Rd	0.25 mi N/ Broadway	RID Canal	98.88
990268	Jomax Road	0.25 mi. W of Dysart Rd	Drainage Channel	96.47
10274	Jomax Road	.25 mi W/ Grand Ave	Wash	99.94
10511	King Drive	180' W of Opportunity Way	Wash	89.4
990248	Laurel Valley Way	just N of Keller Drive	Wash	96.89
990177	Lk Pleasant Ent Rd	0.2 mi E/ Castle HSpr Rd	Wash	93.87
10052	Lone Mountain Rd	0.75 mi E/ 227th Ave	Wash	98.96
10053	Lone Mountain Rd	0.65 mi E/ 227th Ave	Wash	98.96
7556	Lower Buckeye Rd	1 mi W/ El Mirage Rd	AFR Diversion Channel	83.14
11110	Marsh Rd		Drainage Ditch	NEW

Structure No.	Roadway	Location	Feature Intersected	Sufficiency Rating
7901	MC 85 Hwy	0.5 mi W/ Perryville	Buckeye Canal	97.06
990128	MC-85	0.25 mi E/ Cotton Lane	Drainage Ditch	79.81
990214	MC-85	0.25 mi E/ Perryville Rd	Buckeye Canal S Branch	81.65
990215	MC-85	Just E/ Perryville Rd	Buckeye Canal S Branch	81.65
990219	MC-85	335' W/ Estrella Pkwy	Dirt Irr Ditch	90.16
990220	MC-85	0.3 mi W/Estrella Pkwy	Dirt Irr Ditch	90.16
990127	MC-85	0.5 mi W/ Sarival	Drainage Ditch	93.55
10230	MC-85	0.3 mi E/ Estrella Pkwy	Bullard Wash	94.23
7819	MC-85 Hwy	0.5 mi W/ El Mirage	Agua Fria River	94.86
7583	McDowell Rd	W/ Jackrabbit Tr_195th Av	Wash	99.88
990262	McDowell Road	0.5 mi E of Hawes Rd_Mesa	Drainage Ditch	96.74
10105	McKellips Road	0.5 mi W/ SR 101	Granite Reef Wash	98.61
10242	Meadowbrook Ave	W/ Jackrabbit Tr (195Ave)	Wash	92.94
8797	Meeker Blvd	0.5 mi S/ RH Johnson Rd	Drainage Ditch	96.24
990179	Meeker Blvd	0.75 mi S/ RH Johnson	Golf Cart Underpass	96.24
990226	Memorial Drive	170' E of Republic Way	Split Flow Wash	81.61
10385	Memorial Drive	600' E of Gavilan Pk Pkwy	Wash	81.78
10386	Memorial Drive	1700' E of Gavilan Pk Pkwy	Wash	81.78
10388	Memorial Drive	350' E of Republic Way	Split Flow Wash	81.78
990275	Memorial Drive	270' W of Daisy Mtn Drive	Wash	96.66
10560	Meridian Drive	480' S/ Daisy Mtn Dr	Wash	99.33
10561	Meridian Drive	0.3 mi S/ Daisy Mtn Dr	Wash	99.33
10108	Meridian Rd	0.25 mi N/ McKellips Rd	Wash	81.2
7557	Meridian Rd	0.5 mi N/ Brown Rd	Bulldog Floodway	85.24
990217	Meridian Rd	1/8 mi N/ University	Drainage Ditch	96.54
10846	Meridian Rd (Mesa)	0.5 mi S of Warner Rd	Drainage Channel	96.06
10847	Meridian Rd (Mesa)	0.5 mi S of Warner Road	Power Line Fldwy Chan- nel	96.06
10442	Meridian Road	0.45 mi N/ Warner Rd	Wash	99.82
9593	Miller Rd	0.25 mi N/ SR-85	Buckeye Canal	86.24
10778	Mingus Road	just E/ 25th Avenue	White Spar Wash	99.96
10241	Minnesota Ave	W/ Jackrabbit Trl	Wash	96.96
990246	Missouri Ave	just W of Dysart	Wash	84.28
990245	Missouri Ave	S/ Marshall Ave near 135	Wash	84.37
10510	Missouri Ave	N/ Marshall Ave_135thAve	Wash	84.39
10086	New River Rd	100' E/ I 17 Frontage	Wash	86.55
8011	New River Rd	0.25 mi E/ I 17	Wash	97.87
10021	New River Rd	0.25 mi W/ 7th Ave	Skunk Creek	98.65
7642	New River Rd	at 29th Ave	Wash	99.76
7643	New River Rd	0.25 mi E/ 27th Ave	Wash	99.76
<del>10106</del>	<del>New River Road</del>	<del>0.25 mi E/ I 17</del>	<del>New River</del>	<del>97.87</del>

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Structure No.	Roadway	Location	Feature Intersected	Sufficiency Rating
10083	New River Road	350' N/ Circle Mtn Rd	Cline Creek Wash	99.65
10781	Northern Avenue	1 mi W/ Perryville Rd	FRS#3 Dvrsn Chnl	83.91
10780	Northern Avenue	1 mi. W/ Perryville Rd	Beardsley Wash	89.87
8565	Old Lk Plsnt AccRd	1 mi N/ SR-74	Wash	88.91
10507	Old SR 87	0.8 mi NW of New SR87Junc	Wash	94.26
10521	Old SR 87	1.0 mi NW of New SR87Junc	Wash	94.26
990114	Old Stage Road	0.6 mi N/ New River Rd	Wash	86.93
8021	Old US 80	S/ Gillespie Dam	Gila River	46.5
990181	Old US 80	0.25 mi S/ Cactus Rose	Arlington Valley Wash	64.79
990207	Old US 80	1 mi S/ Cactus Rose	Arlington Valley Wash	85.85
10061	Old US 80	0.3 mi S/ 331th Ave	Arlington Valley Wash	89.35
990209	Old US 80	1.5 mi S/ Cactus Rose	Arlington Valley Wash	94.86
8025	Old US 80	600' N/ 331st Ave	Arlington Valley Wash	95.16
8023	Old US 80	1 mi S/ Arlington Sch Rd	Arlington Valley Wash	95.81
990180	Old US 80	50' S/ Cactus Rose	Arlington Valley Wash	96.86
990205	Old US 80	0.75 mi S/ Cactus Rose	Arlington Valley Wash	96.87
990206	Old US 80	7/8 mi S/ Cactus Rose	Arlington Valley Wash	96.87
9834	Old US 80	1 mi W/ Jct SR-85	Buckeye Drain	98.68
990155	Old US 80	0.5 mi W/ Palo Verde Rd	Buckeye Lateral	98.89
11007	Old US 80	3.5 mi S of Patterson Rd	Layton Wash	99.51
9999	Old US 80	500' E/ Salome Hwy	Hassayampa River	99.68
990208	Old US 80	1.25 mi S/ Cactus Rose	Arlington Valley Wash	99.87
8981	Olive Ave	0.8 mi E/ El Mirage Rd	Agua Fria River	91.08
11009	Olive Ave & BNSFRR	just W of Reems Road	Reems Road Channel	82.38
990276	Olive Avenue	800' E of Perryville Rd	Wash	79.52
10516	Olive Avenue	.5 mi W/ Perryville Rd	Wash W/ Beardsley Canal	80
9588	Olive Avenue	E/ of 99th Ave	New River	80.85
10779	Olive Avenue	0.49 mi. W/ Perryville Rd	Waterfall Wash	84.77
10517	Osborn Road	just W of 195th Avenue	Drain Ditch	84.73
990251	Owens Drive	E of Capra Way	Wash	89.38
9426	Palo Verde Rd	0.25 mi N/ Broadway	RID Canal	98.17
7782	Palo Verde Rd	0.75 mi N/ Old US80 Hwy	Buckeye Canal	98.77
10580	Patagonia Way	N of Honor Court (Anthem)	Wash	96.89
8569	Patton Rd	1 mi W/ Grand Ave	CAP Canal	93.98
8043	Perryville Rd	1/3 mi S/ Van Buren	RID Canal	98.78
8044	Perryville Rd	0.5 mi N/ Southern	Buckeye Canal	98.88
990264	Pinnacle Peak Rd	70' w/ 121st Avenue	Drainage Ditch	83.74
990271	Plymouth Drive	just E of GavilanPkPkwy	Drainage Channel	81.73
9928	Power Rd	S/ Guadalupe Rd	East Maricopa Fldwy	80.65
9927	Power Rd	S/ Guadalupe Rd	RWCD Canal (N. Crossing)	92.6

Structure No.	Roadway	Location	Feature Intersected	Sufficiency Rating
10390	Power Road	0.2 mi S/ Queen Creek Rd	Queen Creek	94.96
990121	Queen Creek Rd	0.3 mi W/ Higley	RWCD Canal (Gilbert)	65.77
8681	Rainbow Rd	1 mi N/ Broadway	RID Canal	98.5
10776	Rainbow Road	0.5 mi S/ Southern Avenue	Buckeye Canal	98.24
990277	Ray Road	1200' E of Mountain Rd	Wash	96.98
990278	Ray Road	900' E of Mountain Rd	Wash	96.98
11008	Reems Rd	0.5 mi N of Northern Ave	Reems Road Channel	82.58
8570	RH Johnson Blvd	N/ Bell Rd	Drainage Ditch	69.65
990182	RH Johnson Blvd	100' E/ 132nd Ave	Drainage Ditch	81.25
11108	Riggs Rd		Sonoqui Wash	NEW
990270	Riggs Road	160' W of Robson Blvd	Golf cart Underpass	91.64
8038	Rittenhouse Rd	0.25 mi N/ Cloud	Queen Creek Wash	86
10239	Roeser Rd	0.5 mi S/ Broadway Rd	Buckeye Feeder Ditch	98.98
9669	Royal Oak Rd	at 99th Avenue Median	Drainage Ditch	96.85
9670	Royal Ridge Rd	at 99th Avenue Median	Drainage Ditch	85.83
9832	Salome Rd	8 mi W/ Harquahala Val Rd	CAP Canal	94.52
990112	Signal Butte Rd	0.5 mi N/ Brown Rd	Signal Butte Floodway	97.9
8982	Signal Butte Rd	N/ Broadway Rd	Drainage Ditch	98.84
990186	Skylark Dr	at Stardust Blvd Median	Drainage Ditch	97.84
990252	Sossaman Rd	980' N of McDowell Rd	Wash	89.38
990253	Sossaman Rd	0.3 mi N of McDowell Rd	Drain Ditch	89.38
990211	Southern Ave	0.5 mi E/ MC-85 (dirt rd)	Buckeye Canal S Branch	93.63
990222	Southern Ave	0.5 mi E/ Crismon Rd	Drainage Channel	94.5
990108	Southern Ave	E/ Ellsworth (Mesa)	Drainage Ditch	95.93
7716	Southern Ave	.6mi E of Signal Butte Rd	CAP Drainage Channel	97.55
8884	Southern Ave	.6mi E/ Signal Butte Rd	CAP Canal (Mesa)	97.55
8573	Spanish Garden Dr	200' E/ 132nd Ave	Drainage Ditch	97.74
990183	Stardust Blvd	165' S/ Yosemite Rd	Drainage Ditch	96.78
7644	Sun Valley Pkwy	300' W/ McMicken Dam	McMicken Dam Channel	99.46
7645	Sun Valley Pkwy-01	0.7 mi N/ McDowell Rd	Wash	93.85
7646	Sun Valley Pkwy-02	0.8 mi N/ McDowell Rd	Wash	93.85
7647	Sun Valley Pkwy-03	1.3 mi N/ McDowell Rd	Wash	93.85
7648	Sun Valley Pkwy-04	1.5 mi N/ McDowell Rd	Wash	93.85
7649	Sun Valley Pkwy-05	1.9 mi N/ McDowell Rd	Wash	93.85
7650	Sun Valley Pkwy-06	2.0 mi N/ McDowell Rd	Wash	93.85
7651	Sun Valley Pkwy-07	2.5 mi N/ McDowell Rd	Wash	93.85
7652	Sun Valley Pkwy-08	2.6 mi N/ McDowell Rd	Wash	93.85
7653	Sun Valley Pkwy-09	2.6 mi N/ McDowell Rd	Wash	93.85
990134	Sun Valley Pkwy-10	2.9 mi N/ McDowell Rd	Wash	93.85

Bridge Management System

Structure No.	Roadway	Location	Feature Intersected	Sufficiency Rating
7655	Sun Valley Pkwy-12	3.4 mi N/ McDowell Rd	Wash	93.85
7656	Sun Valley Pkwy-13	3.6 mi N/ McDowell Rd	Wash	93.85
990135	Sun Valley Pkwy-14	3.7 mi N/ McDowell Rd	Wash	93.85
990136	Sun Valley Pkwy-15	4.2 mi N/ McDowell Rd	Wash	93.85
7657	Sun Valley Pkwy-16	4.4 mi N/ McDowell Rd	Wash	93.85
7658	Sun Valley Pkwy-17	4.5 mi N/ McDowell Rd	Wash	93.85
7659	Sun Valley Pkwy-18	4.6 mi N/ McDowell Rd	Wash	93.85
990137	Sun Valley Pkwy-19	4.6 mi N/ McDowell Rd	Wash	93.85
990138	Sun Valley Pkwy-20	5.0 mi N/ McDowell Rd	Wash	93.85
7660	Sun Valley Pkwy-21	5.1 mi N/ McDowell Rd	Wash	93.85
7661	Sun Valley Pkwy-22	5.3 mi N/ McDowell Rd	Wash	93.85
990139	Sun Valley Pkwy-23	5.6 mi N/ McDowell Rd	Wash	90.85
7662	Sun Valley Pkwy-24	6.1 mi N/ McDowell Rd	Wash	93.85
7663	Sun Valley Pkwy-25	6.1 mi N/ McDowell Rd	Wash	93.85
990140	Sun Valley Pkwy-26	6.4 mi N/ McDowell Rd	Wash	89.79
990141	Sun Valley Pkwy-27	6.6 mi N/ McDowell Rd	Wash	90.85
990142	Sun Valley Pkwy-28	6.7 mi N/ McDowell Rd	Wash	90.85
990143	Sun Valley Pkwy-29	6.8 mi N/ McDowell Rd	Wash	78.99
990144	Sun Valley Pkwy-30	7.0 mi N/ McDowell Rd	Wash	90.85
990145	Sun Valley Pkwy-31	7.2 mi N/ McDowell Rd	Wash	90.85
990146	Sun Valley Pkwy-32	7.3 mi N/ McDowell Rd	Wash	90.85
7664	Sun Valley Pkwy-33	7.3 mi N/ McDowell Rd	Wash	93.85
7665	Sun Valley Pkwy-34	7.4 mi N/ McDowell Rd.	Wash	93.85
7666	Sun Valley Pkwy-35	7.4 mi N/ McDowell Rd	Wash	92.85
990147	Sun Valley Pkwy-36	7.6 mi N/ McDowell Rd	Wash	90.85
7667	Sun Valley Pkwy-37	8.0 mi N/ McDowell Rd	Wash	92.85
7668	Sun Valley Pkwy-38	8.1 mi N/ McDowell Rd	Wash	93.85
990148	Sun Valley Pkwy-39	8.5 mi N/ McDowell Rd	Wash	90.85
990149	Sun Valley Pkwy-40	8.6 mi N/ McDowell Rd	Wash	90.85
990150	Sun Valley Pkwy-41	8.9 mi N/ McDowell Rd	Wash	90.85
7669	Sun Valley Pkwy-42	9.2 mi N/ McDowell Rd	Wash	93.85
7670	Sun Valley Pkwy-43	9.2 mi N/ McDowell Rd	Wash	93.85
7671	Sun Valley Pkwy-44	10.0 mi N/ McDowell Rd	Wash	81.99
7672	Sun Valley Pkwy-45	10.2 mi N/ McDowell Rd	Wash	90.85
7673	Sun Valley Pkwy-46	10.2 mi N/ McDowell Rd	Wash	90.85
990189	Sun Valley Pkwy-47	10.5 mi N/ McDowell Rd	Wash	90.85
990190	Sun Valley Pkwy-48	10.8 mi N/ McDowell Rd	Wash	90.85
7674	Sun Valley Pkwy-49	11.1 mi N/ McDowell Rd	Wash	90.85
7675	Sun Valley Pkwy-50	11.2 mi N/ McDowell Rd	Wash	90.85
7676	Sun Valley Pkwy-51	11.8 mi N/ McDowell Rd	Wash	90.85



Structure No.	Roadway	Location	Feature Intersected	Sufficiency Rating
7677	Sun Valley Pkwy-52	11.8 mi N/ McDowell Rd	Wash	90.85
7678	Sun Valley Pkwy-53	11.9 mi N/ McDowell Rd	Wash	90.85
7679	Sun Valley Pkwy-54	11.9 mi N/ McDowell Rd	Wash	90.85
7680	Sun Valley Pkwy-55	11.9 mi N/ McDowell Rd	Wash	90.85
7681	Sun Valley Pkwy-56	11.9 mi N/ McDowell Rd	Wash	90.85
7682	Sun Valley Pkwy-57	12.0 mi N/ McDowell Rd	Wash	90.85
990191	Sun Valley Pkwy-58	13.1 mi N/ McDowell Rd	Wash	90.85
7683	Sun Valley Pkwy-59	13.9 mi N/ McDowell Rd	Wash	90.85
7684	Sun Valley Pkwy-60	14.1 mi N/ McDowell Rd	Wash	90.85
7685	Sun Valley Pkwy-61	14.3 mi N/ McDowell Rd	Wash	90.85
990192	Sun Valley Pkwy-63	17.7 mi N/ McDowell Rd	Wash	90.85
990193	Sun Valley Pkwy-64	18.1 mi N/ McDowell Rd	Wash	90.85
7687	Sun Valley Pkwy-65	18.3 mi N/ McDowell Rd	Wash	90.85
7688	Sun Valley Pkwy-66	18.4 mi N/ McDowell Rd	Wash	90.85
990194	Sun Valley Pkwy-67	18.5 mi N/ McDowell Rd	Wash	90.85
7689	Sun Valley Pkwy-68	18.9 mi N/ McDowell Rd	Wash	90.85
7690	Sun Valley Pkwy-69	18.9 mi N/ McDowell Rd	Wash	90.85
7691	Sun Valley Pkwy-70	19.1 mi N/ McDowell Rd	Wash	90.85
990195	Sun Valley Pkwy-71	19.1 mi N/ McDowell Rd	Wash	90.85
7692	Sun Valley Pkwy-72	19.3 mi N/ McDowell Rd	Wash	90.85
990196	Sun Valley Pkwy-73	19.5 mi N/ McDowell Rd	Wash	90.85
7693	Sun Valley Pkwy-74	19.6 mi N/ McDowell Rd	Wash	90.85
7694	Sun Valley Pkwy-75	19.7 mi N/ McDowell Rd	Wash	90.85
7695	Sun Valley Pkwy-76	19.7 mi N McDowell Rd	Wash	90.85
990197	Sun Valley Pkwy-77	19.8 mi N/ McDowell Rd	Wash	90.85
7696	Sun Valley Pkwy-78	20.4 mi N/ McDowell Rd	Wash	90.85
7697	Sun Valley Pkwy-79	21.4 mi N/ McDowell Rd	Wash	90.85
7698	Sun Valley Pkwy-80	21.6 mi N/ McDowell Rd	Wash	90.85
7699	Sun Valley Pkwy-81	22.1 mi N/ McDowell Rd	Wash	90.85
7700	Sun Valley Pkwy-82	22.5 mi N/ McDowell Rd	Wash	90.85
7701	Sun Valley Pkwy-83	22.6 mi N/ McDowell Rd	Wash	90.85
7702	Sun Valley Pkwy-84	22.9 mi N/ McDowell Rd	Wash	90.85
7703	Sun Valley Pkwy-85	23.4 mi N/ McDowell Rd	Wash	90.85
990198	Sun Valley Pkwy-86	23.6 mi N/ McDowell Rd	Wash	90.85
7704	Sun Valley Pkwy-87	24.1 mi N/ McDowell Rd	Wash	90.85
7705	Sun Valley Pkwy-88	24.2 mi N/ McDowell Rd	Wash	90.85
990110	Sunland Ave	E/ Ellsworth	Drainage Ditch	96.89
9683	Thunderbird Rd	at 99th Ave Median	Drainage Ditch	87.58
990200	Trail Ridge Dr	200' W/ Yosemite Dr	Drainage Ditch	96.83
8629	Turner Rd	0.5 mi S/ Baseline Rd	Buckeye Canal	99.94

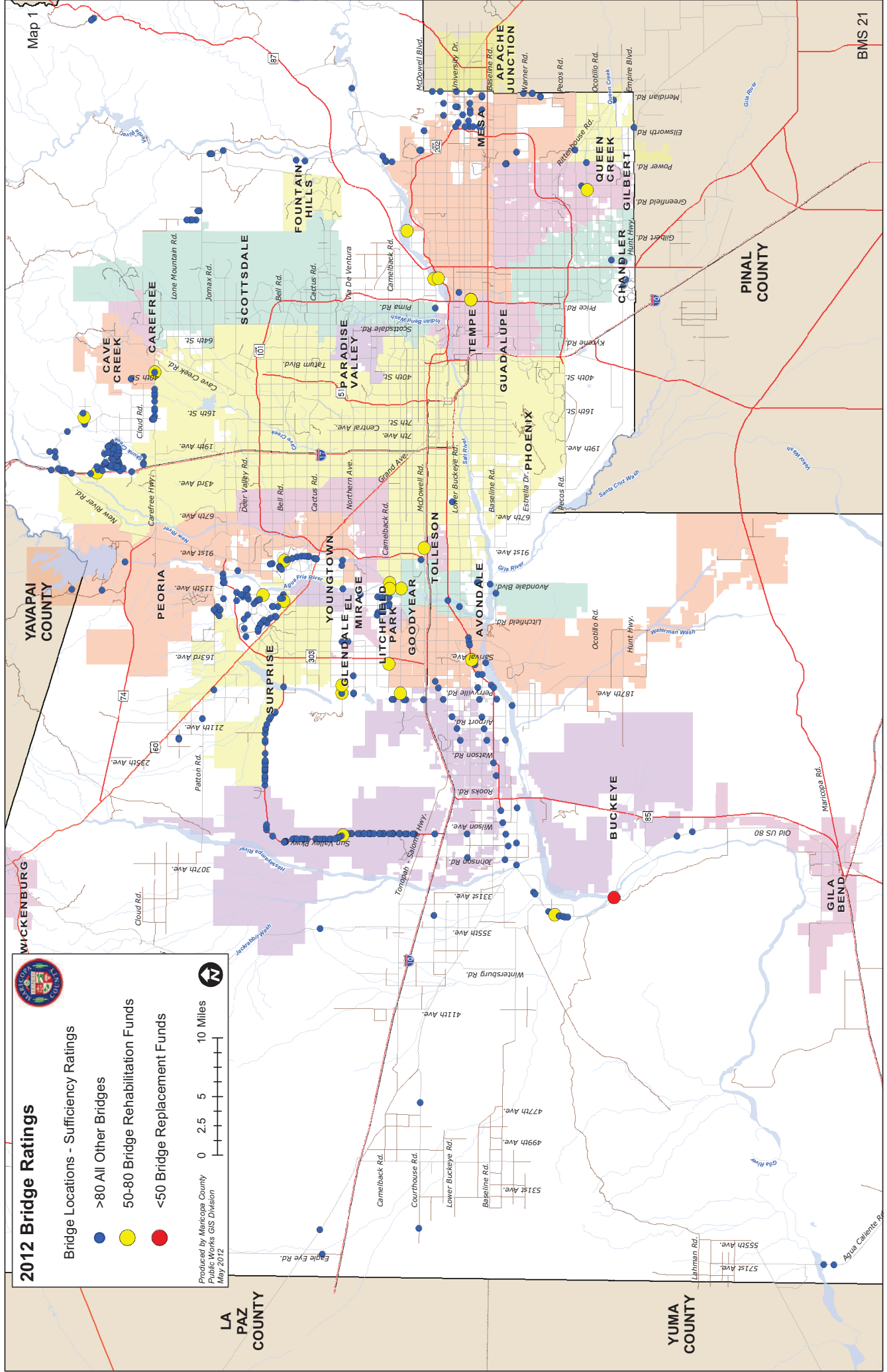
Bridge Management System

Structure No.	Roadway	Location	Feature Intersected	Sufficiency Rating
8584	Tuthill Rd	0.5 mi S/ Beloat Rd	Gila River	96.28
990152	Union Hills Dr	at 99th Ave	Drainage Ditch	95.65
9374	University Dr	900' W/ Dobson	Tempe Canal	95.43
8862	University Drive	0.5 mi E/ Ellsworth Rd	CAP Canal	98.41
8882	Van Buren St	1 mi W/ 339th Ave	Dickey Wash	91.13
8881	Van Buren St	0.5 mi W/ Citrus Rd	RID Canal	98.55
7706	Van Buren St	E/ SVP-Palo Verde Rd	Drainage Ditch	99.88
990273	Venture Drive	0.46 mi. SW of Anthem Way	Wash	84.25
8983	Via Hermosa	W/ Forest Rd (Rio Verde)	Wash	99.7
990274	WhiteTanksMnt Blvd	460' W of 183rd Ave	Drainage Channel	96.85
10369	Whitman Drive	600' E/ Galvin Peak Pkwy	Wash	99.86
10514	Wigwam Creek Blvd	550' NW of Orange Drive	Drain Ditch	81.45
10515	Wigwam Creek Blvd	just N of Camelback Rd	Drain Ditch	81.45
10513	Wigwam Creek Blvd	200' SW of 124th Lane	Drain Channel	96.55
8577	Wildwood Drive	200' W/ 125th Ave	Drainage Ditch	97.96
10782	Williams Drive	0.3 mi. E/ El Mirage Rd	McMicken Outfall Wash	83.63
990263	Williams Drive	at 123rd Avenue	Drainage Ditch	89.34
8578	Wilson (283rd) Ave	1 mi S/ Baseline	Buckeye Canal	98.72
9919	Woods Rd	E/ Old US-80	Gila Bend Canal	98.51
990267	Yearling Road	0.2 mi. e/ Litchfield Rd	Drainage Channel	85.62

# 2012 Bridge Ratings

- Bridge Locations - Sufficiency Ratings
- >80 All Other Bridges
  - 50-80 Bridge Rehabilitation Funds
  - <50 Bridge Replacement Funds

Produced by Maricopa County  
Public Parks GIS Division  
May 2012



# Roadway Management System

Fiscal Year 2012



Programming & System Analysis



[www.maricopa.gov](http://www.maricopa.gov)

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MCDOT	RMS i

## Introduction

Pavement maintenance is broadly identified as work accomplished to preserve or extend the pavement's life until major rehabilitation or complete reconstruction is performed. Maintenance is classified by function as either routine or preventive.

Preventive maintenance preserves rather than improves the capacity or strength of the pavement structure. In order for preventive maintenance to be effective it should be applied to structurally sound pavement before the pavement displays significant if environmental distress such as raveling, oxidation and block cracking. Timely treatments prove to be the most cost effective. While routine maintenance more typically consists of, pothole repair, patching, sweeping and/or striping.

All roads deteriorate over time due to environmental conditions and the volume and type of traffic using the roadway. The roadways within the jurisdiction of the Maricopa County Department of Transportation (MCDOT) are maintained at a high level of service by the following County program:

- Continuously monitor and evaluate roadway conditions, roadway evaluation ratings are stored in the Road Management System (RMS) database
- Report roadway conditions to decision makers via annual reports
- Modeling pavement conditions and maintenance strategies
- Develop annual and long term maintenance plans and implement the plans as funding permits

## Roadway and Pavement Evaluation Ratings

### Pavement Condition Ratings (PCR)

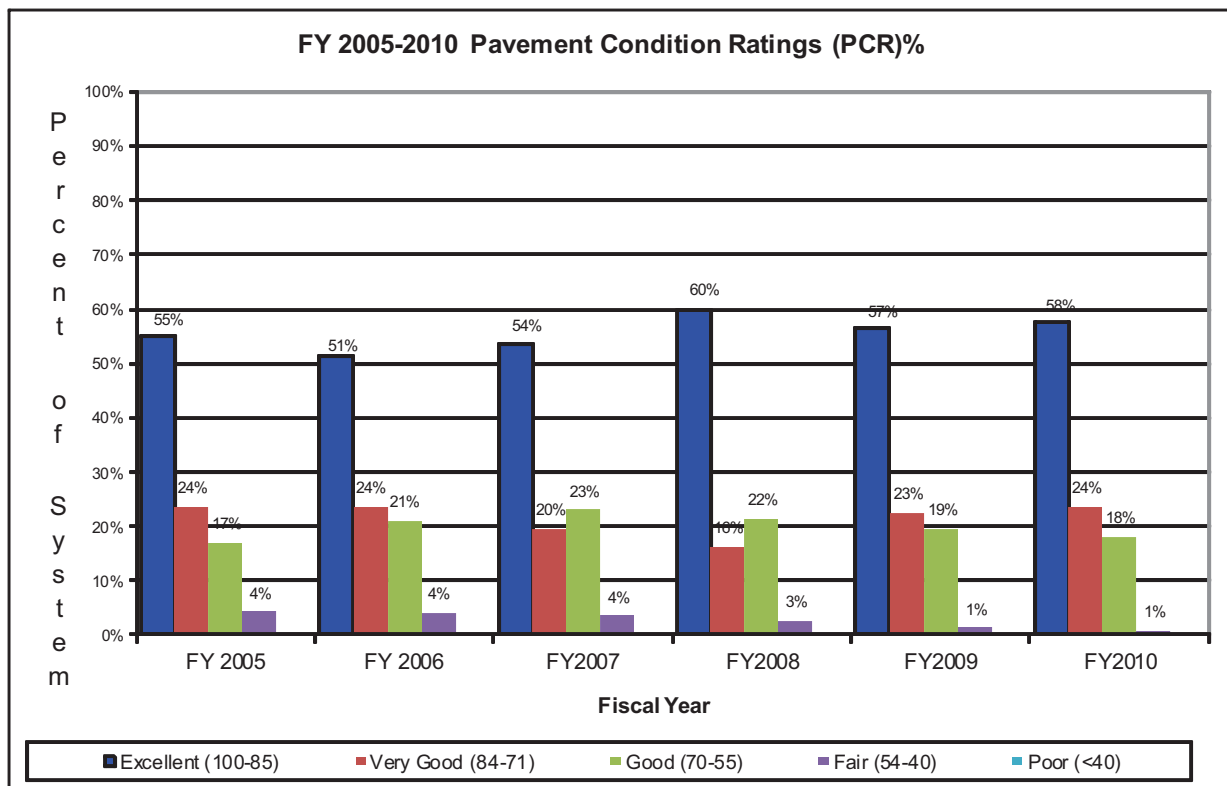
The Road Management Section evaluates pavement conditions for surface distress every 12-18 months for arterial and collector roads and every other year for local roads. Half of the local roads are evaluated each year. The ratings range from 0 to 100 with 100 being new pavement or pavement with no distress. The result allows for quantifying the overall pavement condition of the road network. See the Pavement Preservation Program (PPP) document for further details.

### International Roughness Index (IRI)

MCDOT uses a Laser Road Profiler (LRP) equipped with triple (3) lasers, one in each wheel track and one in the mid-lane to collect IRI data. Annually the MCDOT Road Management Section collects the IRI for each arterial road segment with a length greater than a quarter of a mile. The IRI values are determined for each road segment on a scale from 1 to 500 with 500 representing an extremely rough road. IRI values are categorized by performance subgroups and the percentage of each group can be seen in Figure 2; IRI Ratings.

MCDOT utilizes the PCR and IRI ratings to forecast preventive maintenance programs and Transportation Improvement Program (TIP) planning. The consistent

Figure 1: FY 2005-2010 Pavement Condition Ratings



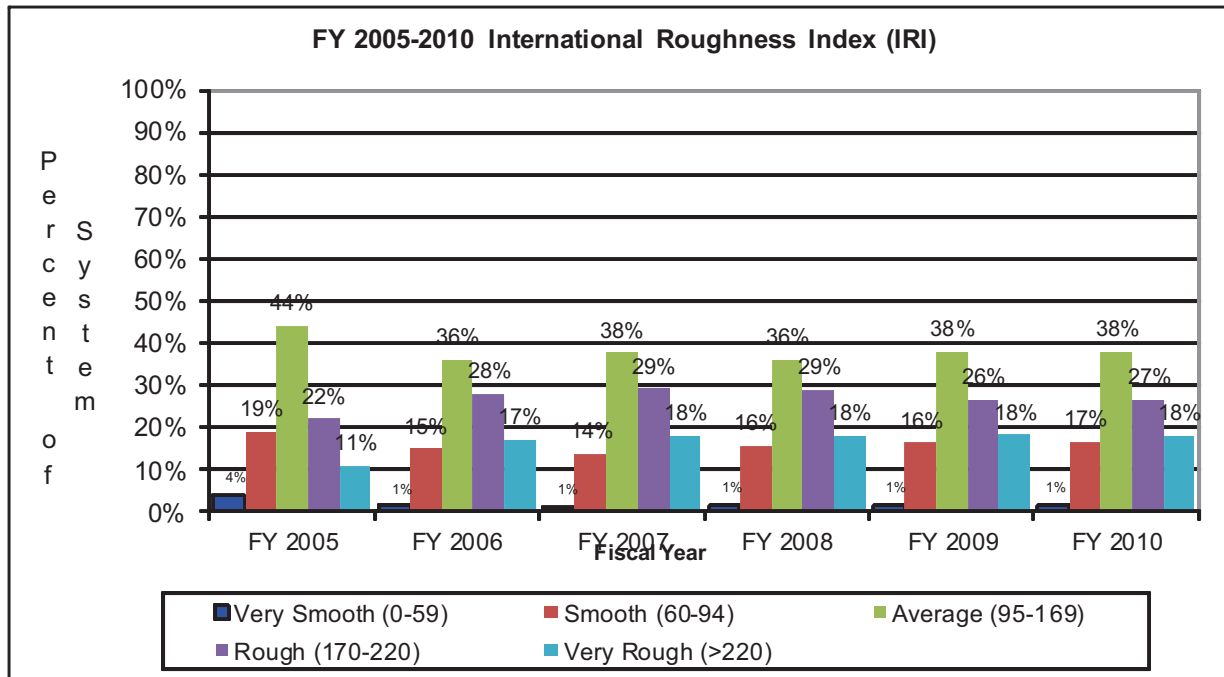
results of implementing preventive maintenance on MCDOT roads is evident in the above chart Figure 1: PCR Ratings, which shows the PCR quality by percentage ranking of all arterial roads in the County. The PCR data is also presented in Table 4 on page 12 of this report.

Sufficiency Ratings

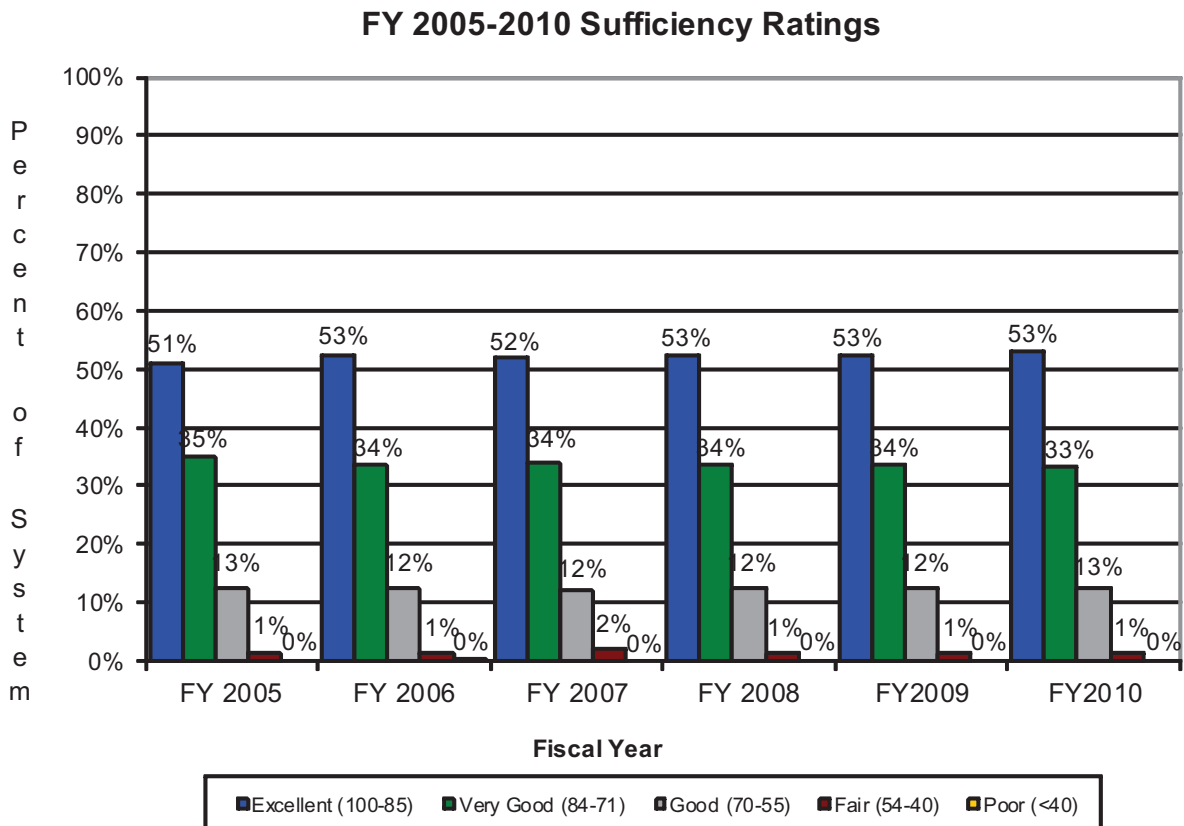
The Road Management Section collects most of the details for each arterial road segment. The rating identifies how well each road segment compares to the MCDOT Roadway Design Manual (RDM) standards. Ratings for each category are combined per road segment and scored on a scale from 0 to 100, 100 representing a road in compliance with the RDM standards.

The sufficiency ratings of arterial roads are updated only after major improvements or reconstruction of the road. New construction, widening, or significant improvement to the safety issues such as, bottleneck, drainage, vertical and horizontal sight distance are required to impact the rating. Sufficiency Rating of the network is provided in Figure 3.

**Figure 2: FY 2005-2010 International Roughness Index**



**Figure 3. FY 2005-2010 Sufficiency Ratings**





## TRUCK TRAFFIC ON ARTERIALS AND COLLECTORS

Vehicle classification counts are conducted annually by MCDOT. The latest truck count data is shown in Figure 4. Truck traffic has declined 49% on MCDOT's arterial and collector roads since 2006. This is one indicator of the slow economy in the County. Individual yearly declines in the percent of truck traffic are shown in figure 5. The only positive aspect of this decline is that MCDOT's roadways will experience slower deterioration until the economy improves.

Figure 4: Average Percent of Trucks on Arterials & Collectors

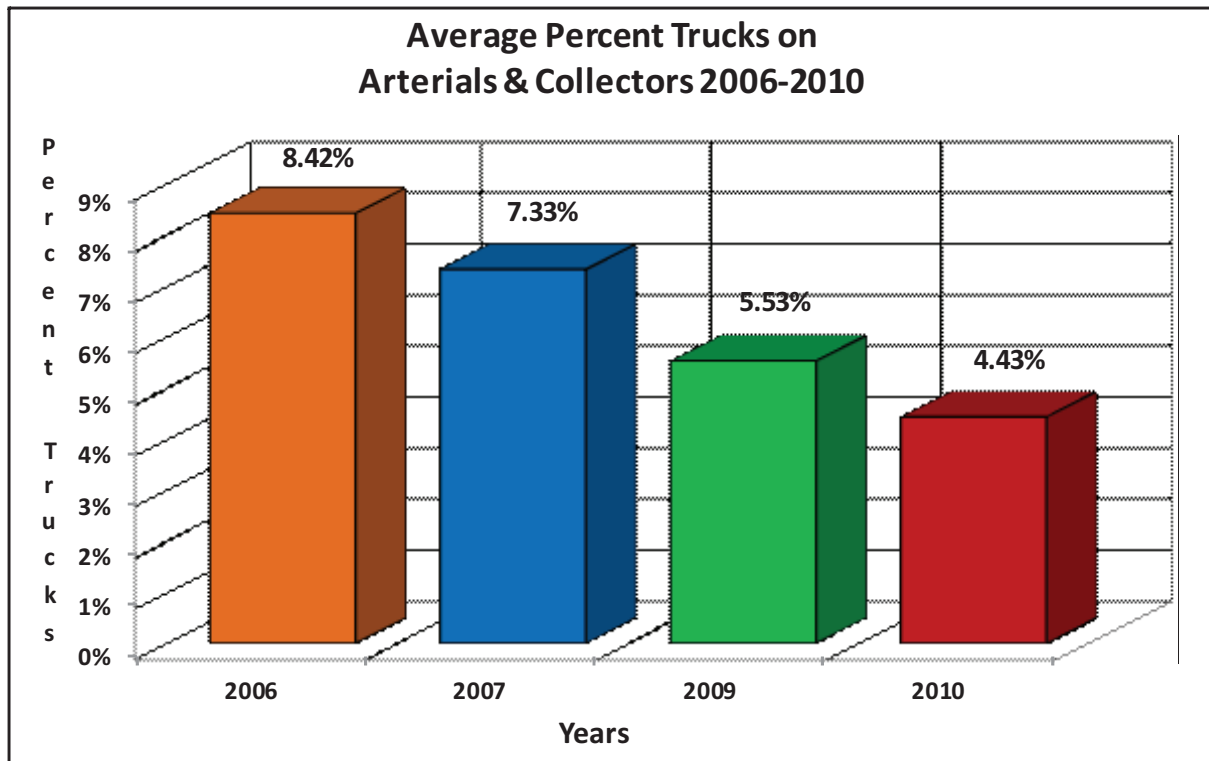
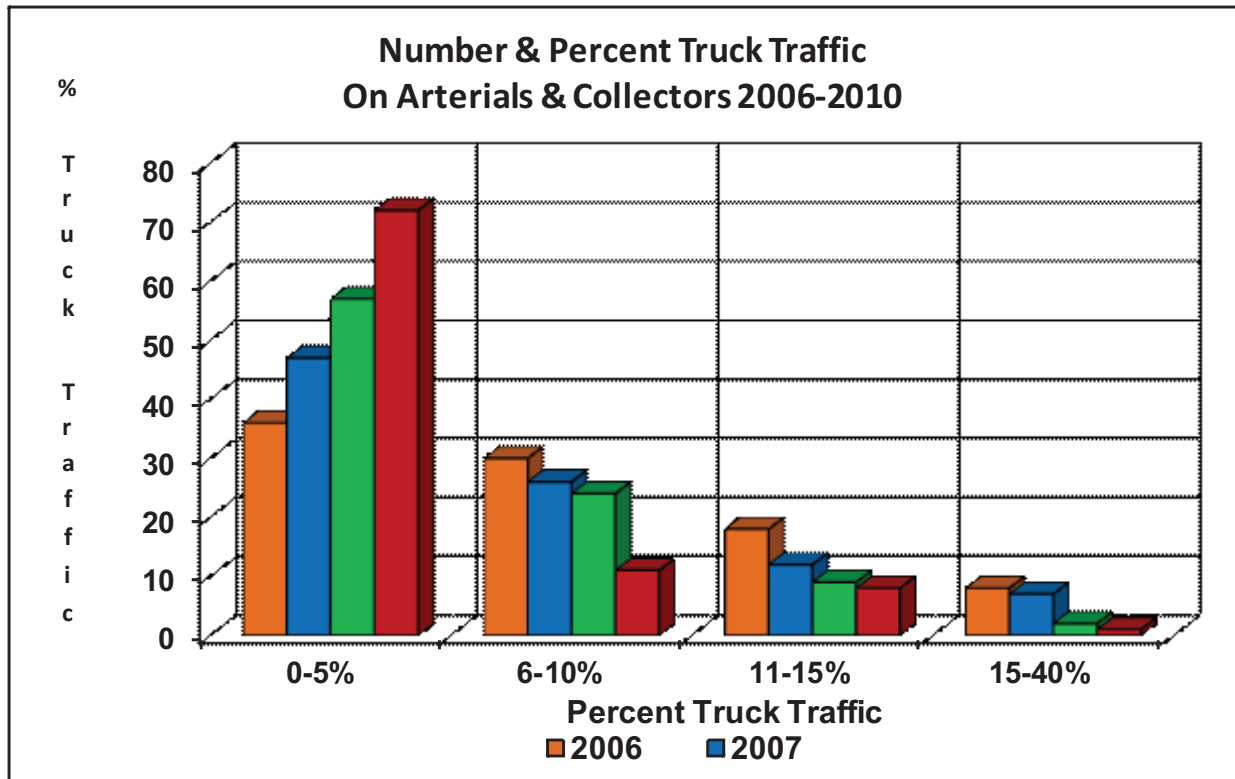


Figure 5: Yearly Percent of Trucks on Arterials & Collectors 2006-2010



### Preventive Maintenance Performance

Preventive maintenance extends the life of the pavement and provides for better performance. The majority of treatments for flexible pavement involves sealing the existing surface and providing a new wearing surface for traffic.

MCDOT has used preventive maintenance practices for decades with excellent results. Table 1 shows the break down of each treatment that is typically used, the frequency of application and the observed increase in pavement life per application.

We can see how the maintenance of the road network could fall behind with only one tenth (\$10 million) of the needed amount (\$95 million) funded each year.

**Table 1: Preventive Maintenance Treatment Longevity**

Treatment	Pavement age at time of first application (yr.)	Frequency of application (yr.)	Observed increase in pavement life (yr.)
Fog Seal/ Rejuvenate	3 to 4	3 to 4	3 to 4
Crack Filling/Sealing	8 to 10	4 to 5	4 to 5
Single Chip Seal	10 to 12	5 to 6	5 to 6
Double Chip Seal	10 to 12	5 to 6	5 to 6
Micro Surfacing	10 to 12	5 to 6	5 to 6
Slurry Seal	10 to 12	5 to 6	5 to 6
Arterial—Thin Overlay— 1.5"- 2" ARHM	12 to 15	12 to 15	12+
Local—Mill & Resurface 1.5" ARHM	35+	TBD*	TBD*
* TBD—To be determined			

### Preventive Maintenance Results

MCDOT currently has jurisdiction of 1,112 miles (2,613 lane miles.) of arterial roads, 884 miles (1856 lane miles) of local roads and 52 miles (104 lane miles) of park roads. That adds up to a total of 2,048 centerline miles and 4,573 lane miles. In Fiscal Year 2010 MCDOT maintained 1,257 lane miles of road which is equal to 27.5% of the total lane miles.

The cost to complete the 2010 maintenance plans was \$22,327,505. MCDOT also spent \$13,563,980 in 2009.

These efforts resulted in network average PCR value of 82.6 for arterial roads versus 81.70 for 2009. Local roads improved the average PCR value of 91.9, versus 90.3 for 2009. Park roads rated 89.40 for 2010, park roads are a new breakout in 2010.

### Pavement Preservation Plan

Pavement preservation plans are generated by application of the preservation strategy flow charts to the current pavement ratings in the database. Implementation of our projected maintenance plans for FY 2011 will cost \$27.0 million to apply all the recommended surface treatments and existing pavement rehabilitation. While the total network maintenance needs for the next five fiscal years (FY 2011 - 2015) are estimated at \$70 million. The FY 2011 pavement preservation plans and estimated costs are provided in Figures 6 and 7.

The MCDOT maintenance funds will be enhanced in FY 2011 by the American Recovery and Reinvestment Act (ARRA) for \$6.47 million and \$2.5 million additional

**Table 2: FY 2010 Pavement Preservation 5 Year Summary Report**

**FY 2010 - Pavement Preservation 5 Year  
Summary Report  
7/15/2010**

Preservation Type	FY 2009 - FY 2013 5 Yr. Projection - 2008		FY 2009 - FY 2010 Completed		
	Ln Miles	Cost	Ln Miles	Cost	%
Reconstruction	15.83	\$3,412,500	1.85	\$465,000	14%
Arterial AR Overlay	129.51	\$12,189,230	92.69	\$7,700,356	63%
Local M&R	263.00	\$25,058,275	314.96	\$15,923,455	64%
Chip Seal HV	234.88	\$3,742,328	165.77	\$2,929,188	78%
Chip Seal LV	187.70	\$2,990,576	152.87	\$2,166,356	72%
Slurry	264.74	\$5,659,845	37.97	\$695,445	12%
Micro Seal	0.00	\$0	29.61	\$863,409	
Preservative Seal	565.00	\$2,923,374	385.36	\$2,198,335	75%
Crack Seal	383.66	\$1,985,130	711.38	\$3,414,938	172%

<b>Pavement Preservation Totals:</b>	<b>2,044.32</b>	<b>\$57,961,258</b>	<b>1,892.46</b>	<b>\$36,356,482</b>	<b>63%</b>
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**FY 2011 - FY 2015**

Preservation Type	5 Yr. Projection -	
	Ln Miles	Cost
Reconstruction	12.18	\$2,570,000
Arterial AR Overlay	229.89	\$27,531,558
Local M&R	259.37	\$11,817,465
Chip Seal HV	626.06	\$11,931,122
Chip Seal LV	160.84	\$3,224,500
Slurry Seal	307.43	\$5,681,016
Micro Seal	0.00	\$0
Preservative Seal	717.91	\$4,663,373
Crack Seal	824.38	\$5,028,982

<b>Pavement Preservation Totals:</b>	<b>3,138.06</b>	<b>\$72,448,016</b>
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Figure 6: FY 2010 Completed Maintenance Mileage

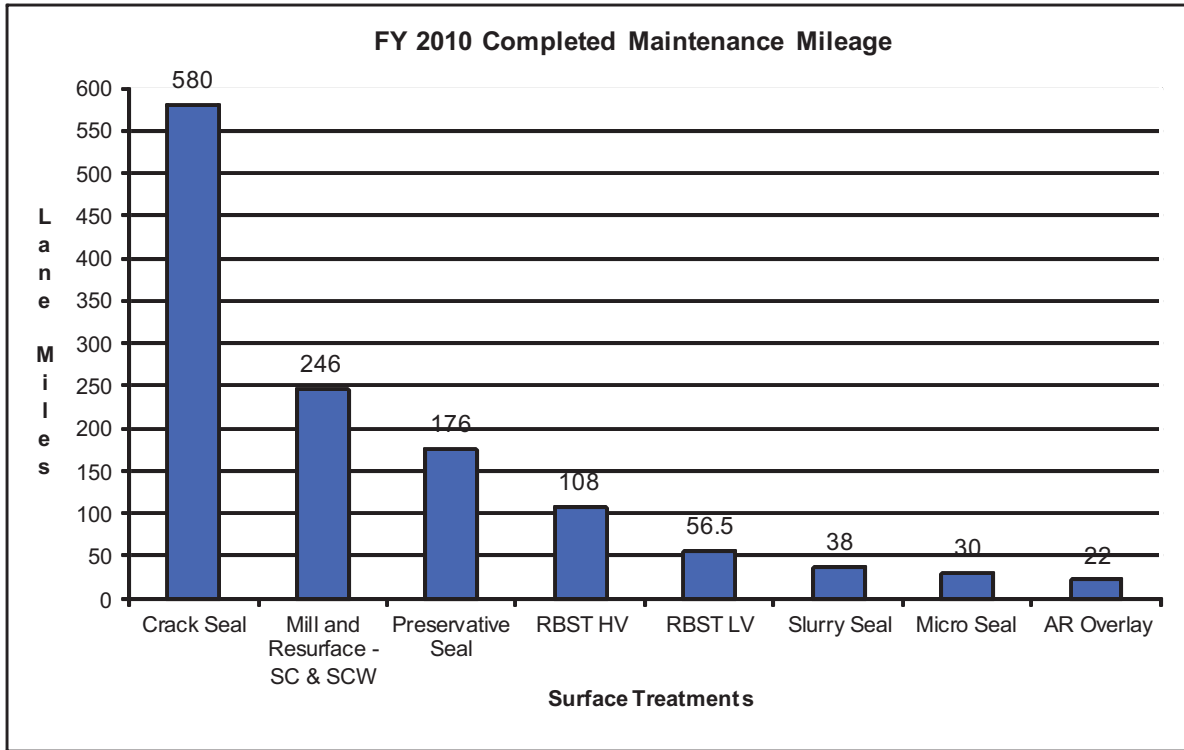


Figure 7: FY 2010 Maintenance Costs

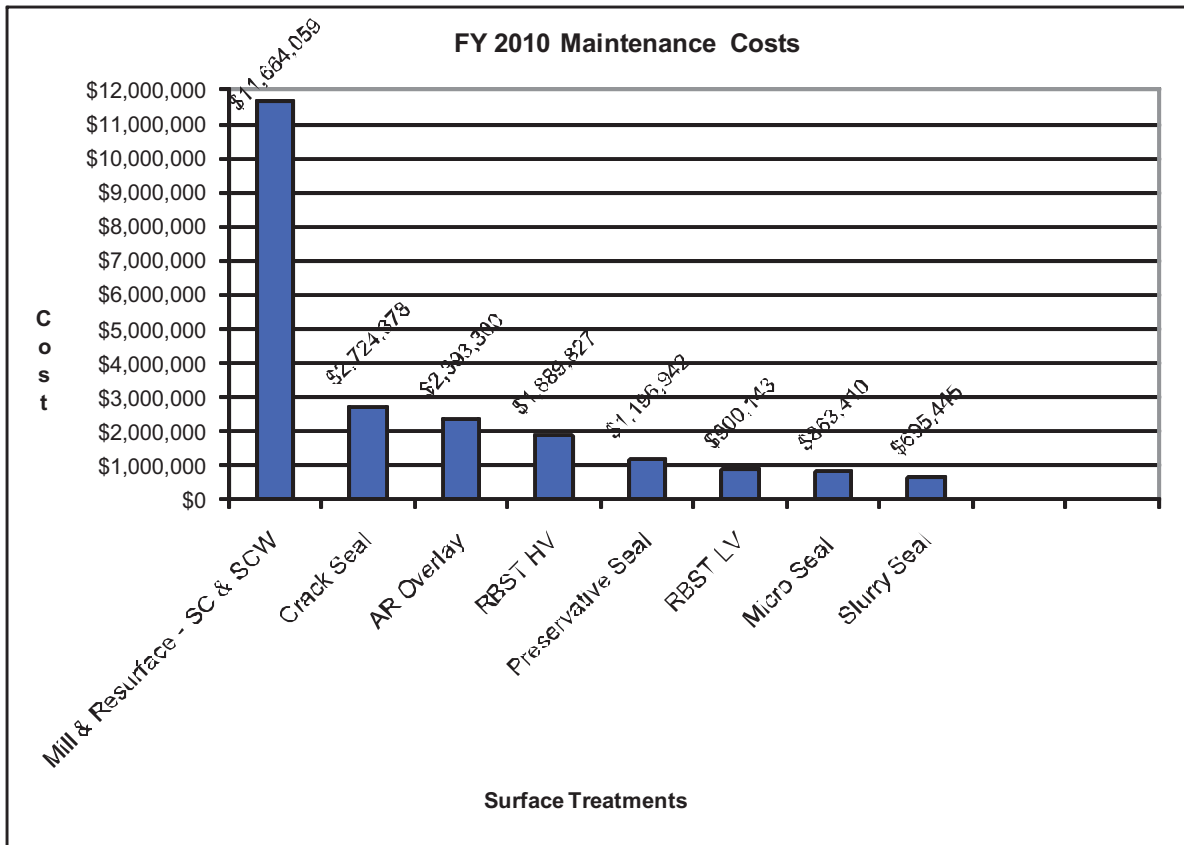


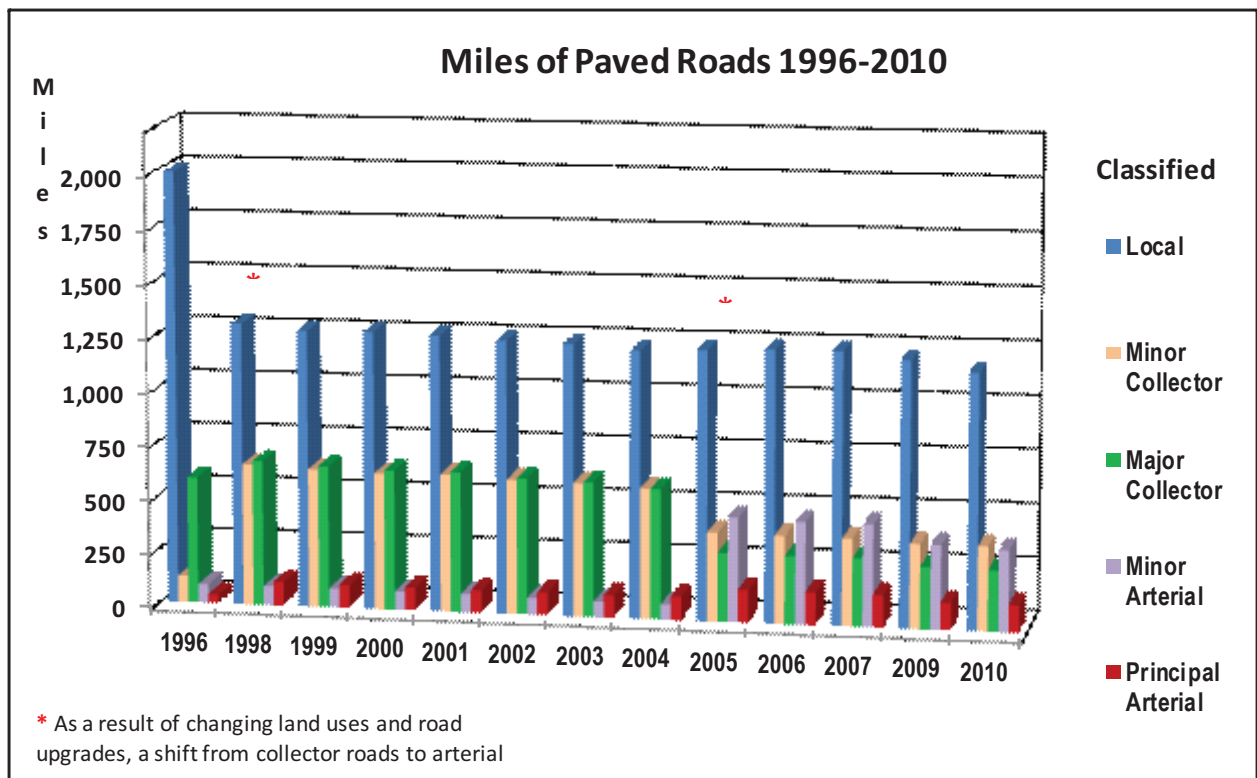
Table 3: Miles of MCDOT Paved Roads FY 1996-2010

Miles of MCDOT Paved Roads FY 1996-2010														
Classification	1996	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2009	2010	Diff
Local	1,998	1,305	1,281	1,284	1,276	1,262	1,254	1,236	1,246	1,258	1,258	1,227	1,179	-819
Minor Collector	123	652	639	630	635	621	616	602	411	406	404	391	390	267
Major Collector	583	669	654	645	648	630	622	601	318	314	315	287	282	-301
Minor Arterial	86	88	87	85	85	78	73	69	484	473	472	389	376	290
Principal Arterial	39	108	106	105	104	105	105	109	150	150	150	125	126	87
<b>TOTAL</b>	<b>2,829</b>	<b>2,822</b>	<b>2,769</b>	<b>2,750</b>	<b>2,749</b>	<b>2,696</b>	<b>2,670</b>	<b>2,618</b>	<b>2,608</b>	<b>2,601</b>	<b>2,600</b>	<b>2,419</b>	<b>2,353</b>	<b>-476</b>

Note: As a result of changed land usages and road upgrades, a shift from collector roads to arterial roads occurred.

In 1997 and 2005 MCDOT roads were reclassified accordingly as seen in the above table.

Figure 8: Miles of Paved Roads 1996-2010



funds to be used in a 1.5” asphalt rubber overlay program. Furthermore, MCDOT is going to fund \$5.30 million for a mill and resurface plan for Sun City West MRS 1. There will be \$2.20 million of arterial AR overlays, \$2.25 million for crack sealing, \$2.5 million for chip seal, \$1.20 million for preservative seal, and \$0.88 million for slurry seal. There will be 13 programs in all executed this year. See Table 4: FY 2010 Completed Maintenance Plans.

## **Summary**

Fiscal Year 2010 has been a very successful year MCDOT’s pavement preservation group and the Operations Division. We have completed 16 of 17 programs this year with an expenditure of \$22,327,505 and only the 2010 ARRA AR Overlay being delayed due to federal requirements and is still in progress.

All the effort this year has resulted in an improvement in the network average PCR value of 82.6 for arterial roads and PCR value of 91.9 for local roads. The results of the FY2010 pavement preservation program show the network is improving. In 2009 the Avg PCR was 85.56. It increased to 86.80 in 2010, a 1.5% improvement. If additional funding becomes available we will consider accelerating our preventative maintenance plans for more crack seal, slurry seal, chip seal and mill and overlay projects to improve the quality of MCDOT roads.

In 2008, it was projected that the pavement preservation and preventative maintenance needs for the five- year period of FY 2009 to 2013 would be \$57.9 million to keep the County roadway system at the then existing serviceability level. In the past two fiscal years, FY2009 and 2010, MCDOT has completed pavement preservation and preventative maintenance projects for a total amount of \$36.4 million, or 63 percent of the projection. Furthermore, due to the dynamic nature of the roadway system, in FY 2010 the projected needs for pavement preservation and preventative maintenance were identified to be \$72.5 million for the next cycle of five fiscal years, FY2011 to 2015. See Table 2: Pavement Preservation 5 Year Summary Report for details.

Figure 9: FY 2011 Pavement Preservation Plan

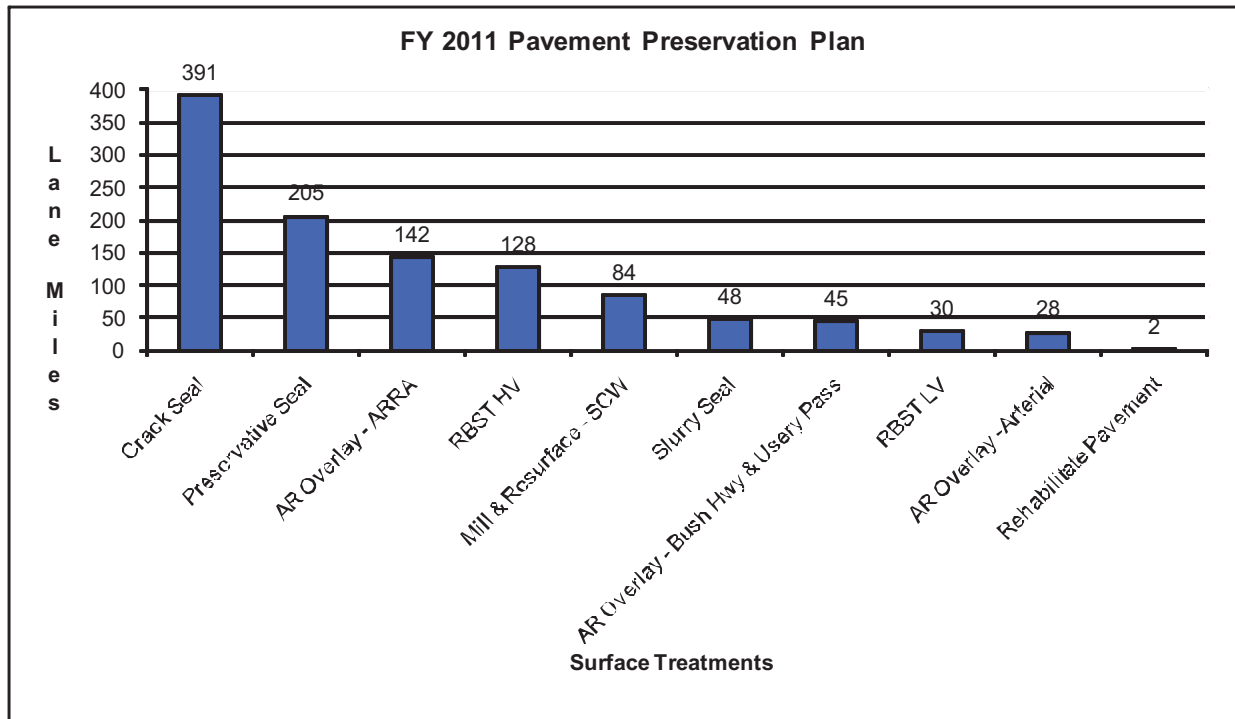


Figure 10: FY 2011 Estimated Maintenance Cost

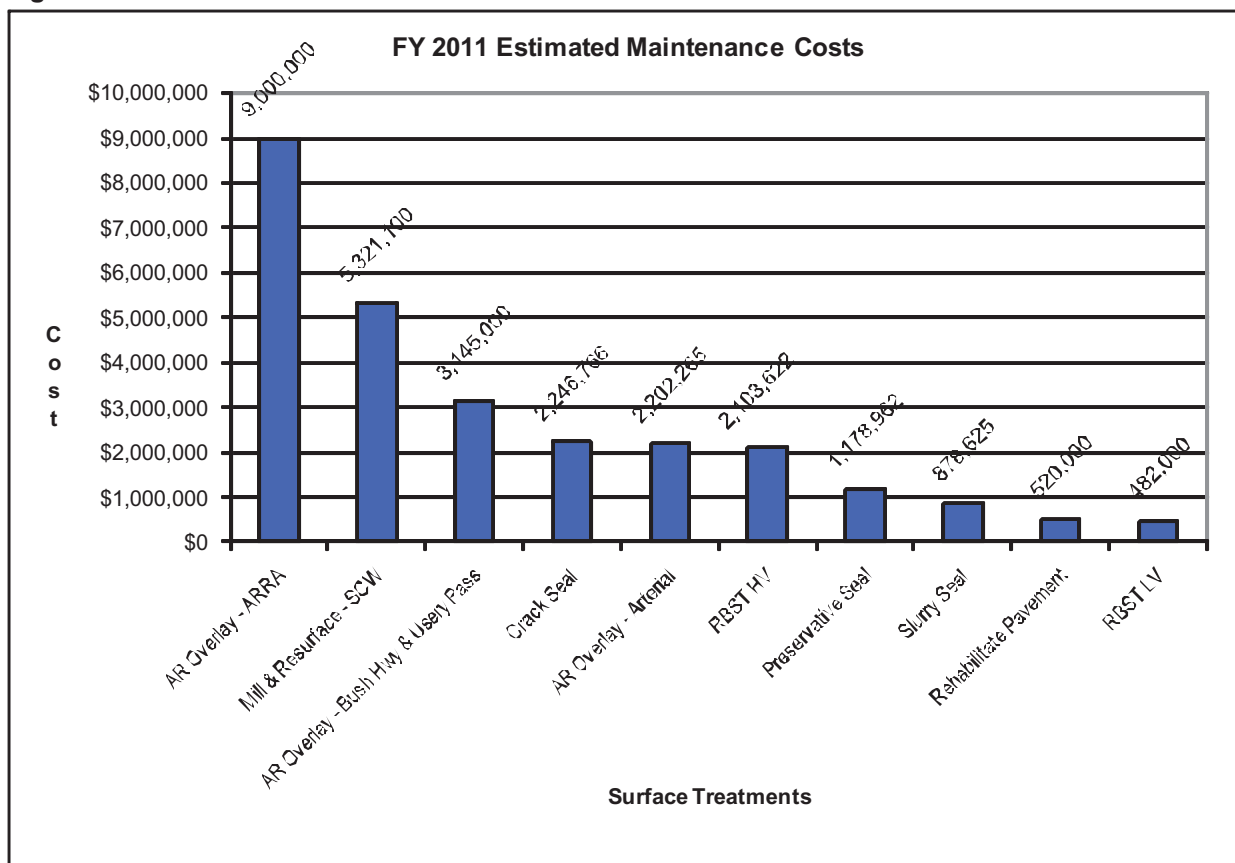




Table 4: FY 2010 Completed Maintenance Plans

MCDOT Pavement Management Program  
Road Management System

<b>FY 2010 Completed Maintenance - RMS</b>					
<b>Project Name</b>	<b>WO#</b>	<b>Cost/SY</b>	<b>SY</b>	<b>Ln Miles</b>	<b>Total Cost</b>
2010 - AR Overlay	30050068	\$ 13.00	184,100	22.42	\$2,393,300.00
2010 - Chip Seal HV	30050069	\$ 1.94	459,050	55.89	\$890,557.00
2010 - Chip Seal LV	30050069	\$ 1.94	463,991	56.49	\$900,142.52
2010 - Slurry Seal	30050070	\$ 2.23	311,859	37.97	\$695,445.57
2010 - Preservative Seal - Local - TRMSS	30050071	\$ 0.94	1,009,514	122.92	\$948,943.16
2010 - Crack Seal - All	30050072	\$ 0.52	993,097	120.92	\$516,410.44
2010 - Micro Seal	30050080	\$ 3.55	243,214	29.61	\$863,409.70
2010 - Crack Seal - All	30050081	\$ 0.46	1,113,921	135.63	\$512,403.66
2010 - Crack Seal - All	30050082	\$ 0.50	1,267,200	154.29	\$633,600.00
2010 - Chip Seal HV	30050083	\$ 2.33	428,871	52.22	\$999,270.29
2010 - Preservative Seal - Local - TRMSS	30050084	\$ 0.65	360,740	43.92	\$234,481.00
2010 - Crack Seal - All	30050093	\$ 0.51	32,690	3.98	\$16,671.90
2010 - Preservative Seal - Local - TRMSS	30068006	\$ 0.18	75,100	9.14	\$13,518.00
2010 - Sun City - MRS 3	TT174	\$ 5.74	662,719	80.69	\$3,804,007.06
2010 - Sun City - MRS 4	TT175	\$ 5.79	1,357,522	165.29	\$7,860,052.38
2010 - Crack Seal - All	TT175	\$ 0.77	1,357,522	165.29	\$1,045,291.94
Project Maintenance Totals				1,256.68	\$22,327,504.62
TIP Funding:					\$12,709,351.38
Operations Funding:					\$9,618,153.24

Table 5: FY 2011 Pavement Preservation Plan

FY 2011 - Pavement Preservation Plan						
Status Update 06.30.2010						
Project Name	WO #	Cost/SY	SY	Ln Miles	Needs Cost	ARRA Budget
<b>Fiscal Year 2011</b>						
Reconstruct 2 Ln	300500XX	\$26.00	20,000	2.44	\$520,000	
Arterial - AR Overlay	30050087	\$9.80	224,772	27.37	\$2,202,766	
Arterial - AR Overlay - Bush Hwy & Usery Pass	TT--	\$8.50	370,000	45.05	\$3,145,000	\$3,145,000
AR Overlay - ARRA Funds	TT322 & 326	\$7.75	1,167,647	142.17	\$9,049,264	\$9,049,264
Mill & Resurface - Sun City West - MRS 1	TT343	\$7.75	686,594	83.60	\$5,321,104	
Mill & Resurface - Sun City West - MRS 2	TT--	\$0.00	721,818	87.89	\$0	
Mill & Resurface - Sun City West - MRS 3	TT--	\$0.00	523,281	63.71	\$0	
RBST - High Volume - Plan 1 Fall - Low Bid	30050086	\$2.00	681,000	82.92	\$1,362,000	
RBST - Low Volume - Plan 1 SE Fall - Low Bid	30050086	\$2.00	158,500	19.30	\$317,000	
RBST - High Volume - Plan 4 - Spring JOC	30050088	\$2.00	370,811	45.15	\$741,622	
RBST - Low Volume - Plan 4 - Spring JOC	30050088	\$2.00	82,500	10.05	\$165,000	
Slurry Seal - Plan 1	30050092	\$2.25	390,500	47.55	\$878,625	
Preservative Seal - Arterial -	30050091	\$0.75	401,656	48.90	\$301,242	
Preservative Seal - Local - Plan 1	30050091	\$0.75	1,282,575	156.16	\$961,931	
Crack Seal - Plan 1 - Article 5	30050089	\$0.65	1,933,000	235.36	\$1,256,450	
Crack Seal - Plan 2 - JOC	30050090	\$0.65	1,276,665	155.44	\$829,832	
<b>Pavement Preservation Totals:</b>			<b>10,291,319</b>	<b>1,253.05</b>	<b>\$27,051,836</b>	<b>\$12,194,264</b>
			TIP Funding:		\$5,321,104	
			Ops Funding:		\$9,536,468	
			<b>Additional Funding Required:</b>		<b>\$12,194,264</b>	
Project Name	WO #	Cost/SY	SY	Ln Miles	Needs Cost	
<b>Fiscal Year 2012</b>						
Reconstruct 2 Ln ***	300500XX	\$25.00	20,000	2.44	\$500,000	
Arterial Thin AR Overlay	TT--	\$8.00	200,000	24.35	\$1,600,000	
Mill & Resurface - Sun City West - MRS 2	TT--	\$9.00	721,818	87.89	\$6,496,362	
Mill & Resurface - Sun City West - MRS 3	TT--	\$9.00	523,281	63.71	\$4,709,529	
RBST - HV - FY11-2 608k & FY11-3 1.23m	300500XX	\$2.25	1,840,000	224.04	\$4,140,000	
RBST - LV - FY11-2 290k & FY11-3 40k	300500XX	\$2.25	330,000	40.18	\$742,500	
Slurry Seal - FY 11-2	300500XX	\$2.25	420,000	51.14	\$945,000	
Preservative Seal - Arterial FY11	300500XX	\$0.75	600,000	73.05	\$450,000	
Preservative Seal - Local FY11-2	300500XX	\$0.75	1,200,000	146.11	\$900,000	
Crack Seal - Plan	300500XX	\$0.70	561,000	68.31	\$392,700	
Micro Seal - Sun Valley Parkway	TT286	\$2.50	1,114,396	135.69	\$2,785,990	
<b>Pavement Preservation Totals:</b>			<b>7,530,495</b>	<b>916.90</b>	<b>\$23,662,081</b>	
			TIP Funding:		\$15,591,881	
			Ops Funding:		\$8,070,200	
			<b>Additional Funding Required:</b>			

Table 6: FY 2010 Annual Network Rating Summary

**MCDOT Pavement Management Program**  
Road Management System

FY 2010 Annual—Network Rating Summary

<b>Arterial</b>					
	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Average PCR	80.55	80.52	82.04	81.73	82.61
Average IRI	162.02	165.17	163.50	163.80	163.09
Mileage	1213.37	1132.23	1100.18	1102.45	1112.54
PCR 100-85	623.30	602.88	655.57	646.28	636.02
PCR 84-70	284.67	221.15	177.67	200.90	260.19
PCR < 55	49.22	43.56	28.50	18.76	6.77
Miles above 70	907.97	824.03	833.24	847.18	896.21
% above 70	<b>74.8%</b>	<b>72.8%</b>	<b>75.7%</b>	<b>77.0%</b>	<b>81.0%</b>
% below 55	<b>4.1%</b>	<b>3.8%</b>	<b>2.6%</b>	<b>2.0%</b>	<b>1.0%</b>
<b>Local</b>					
	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Average PCR	88.51	89.54	89.18	90.32	91.93
Mileage	840.86	808.33	806.64	885.31	884.09
PCR 100-85	525.42	587.38	597.49	721.16	724.48
PCR 84-70	254.94	181.21	173.76	136.03	119.62
PCR < 55	3.95	1.55	1.30	1.30	5.10
Miles above 70	780.36	768.59	771.25	857.19	844.10
% above 70	<b>92.8%</b>	<b>95.1%</b>	<b>95.6%</b>	<b>96.8%</b>	<b>98.5%</b>
% below 55	<b>0.5%</b>	<b>0.2%</b>	<b>0.2%</b>	<b>0.1%</b>	<b>0.6%</b>
<b>Park</b>					
	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Average PCR	0.00	0.00	0.00	0.00	89.39
Mileage	0.00	0.00	0.00	0.00	52.11
PCR 100-85	0.00	0.00	0.00	0.00	44.97
PCR 84-70	0.00	0.00	0.00	0.00	5.46
PCR < 55	0.00	0.00	0.00	0.00	1.30
Miles above 70	0.00	0.00	0.00	0.00	50.43
% above 70	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>97.0%</b>
% below 55	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>3.0%</b>
<b>Network Totals</b>					
	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Network Avg PCR	<b>83.81</b>	<b>84.28</b>	<b>85.06</b>	<b>85.56</b>	<b>86.80</b>
Network % above 70	<b>82.19%</b>	<b>82.07%</b>	<b>84.14%</b>	<b>85.74%</b>	<b>87.41%</b>
Network % below 55	<b>2.59%</b>	<b>2.32%</b>	<b>1.56%</b>	<b>1.01%</b>	<b>0.64%</b>

Note: FY data is typically selected from June 30th or the last work day of the fiscal year.

Map 1

# PAVEMENT CONDITION RATING (PCR)

- Excellent
- Very Good
- Good
- Fair
- Poor

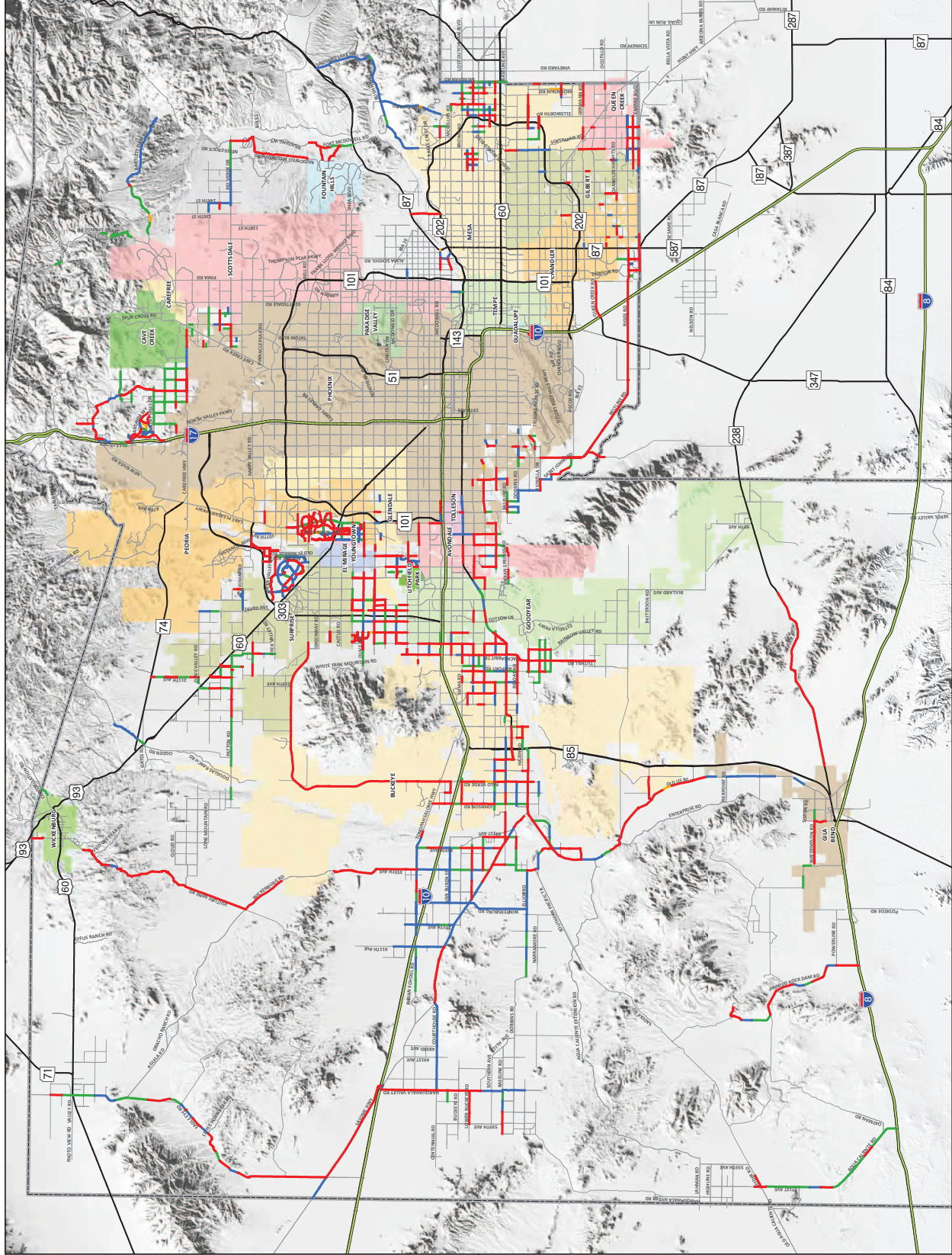
- Interstate Highways
- U.S., State, or County Highways
- Arterial Roads
- Maricopa County



0 2.5 5 7.5 10 Miles

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August 2011



Map 2

# INTERNATIONAL ROUGHNESS INDEX (IRI)

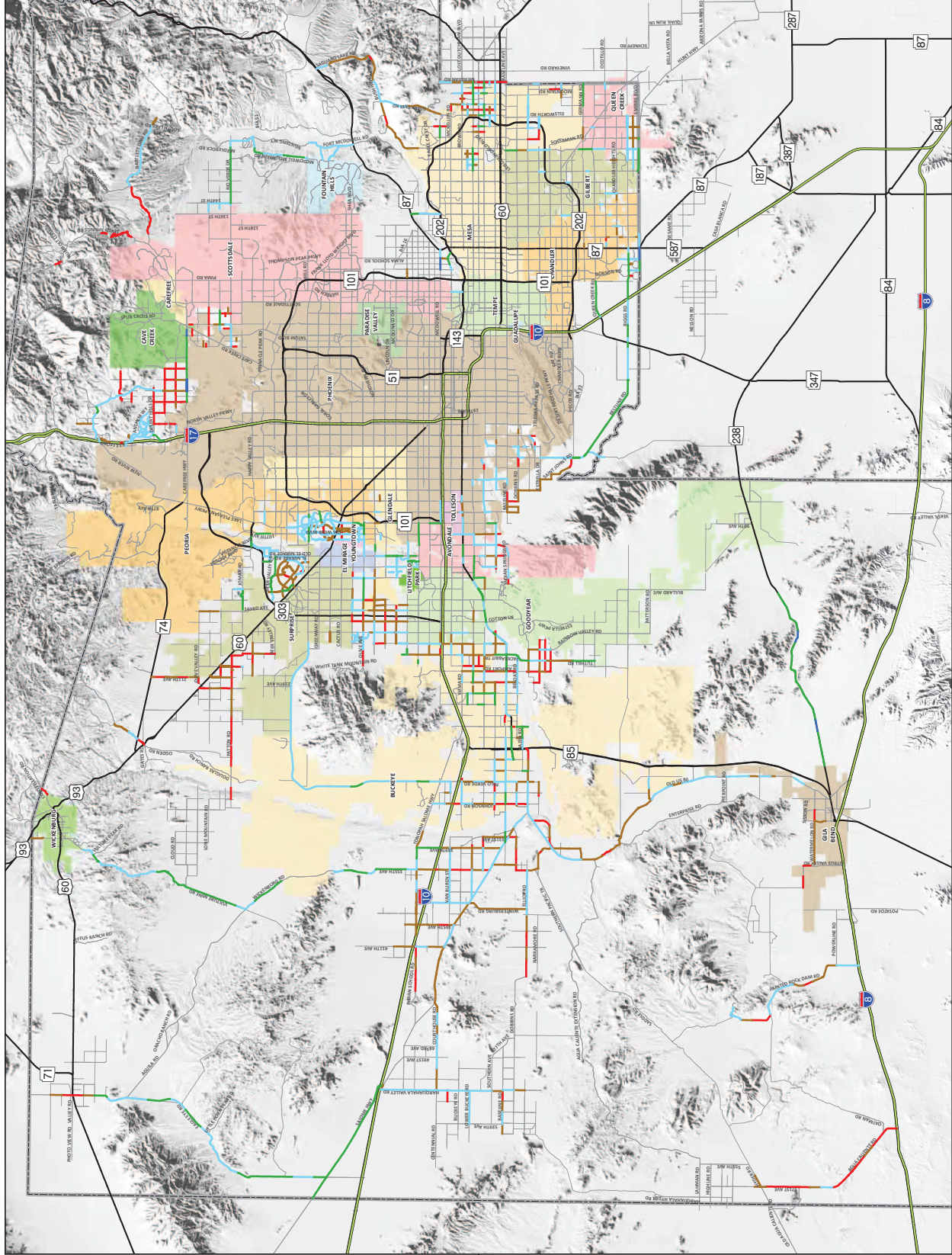
- Very Smooth
- Smooth
- Average
- Rough
- Very Rough
- Interstate Highways
- U.S., State, or County Highways
- Arterial Roads
- Maricopa County



0 2.5 5 7.5 10 Miles

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August 2011



Map 3

### SUFFICIENCY RATING

- Excellent
- Very Good
- Good
- Fair
- Poor

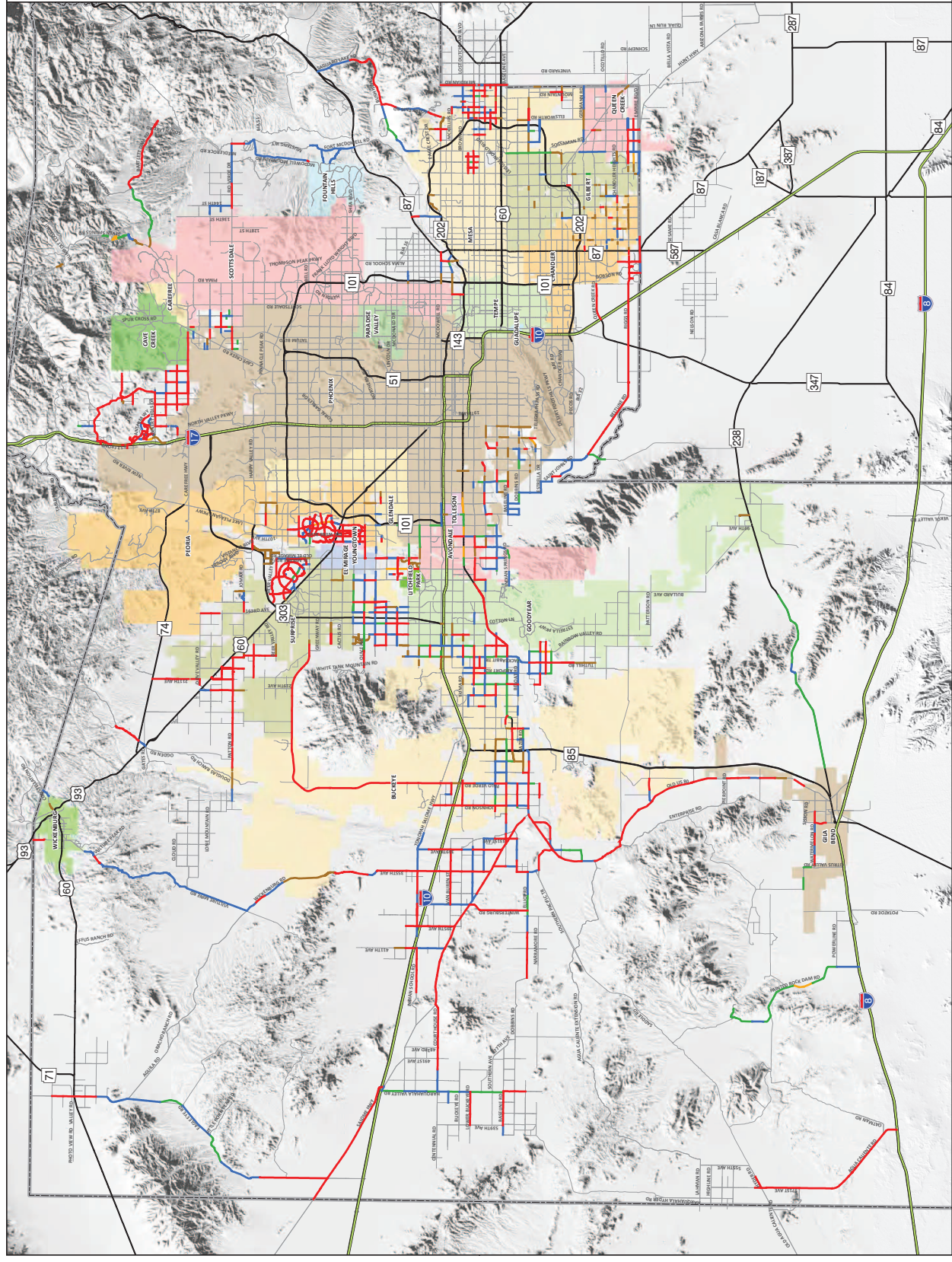
- Interstate Highways
- U.S., State, or County Highways
- Arterial Roads
- Maricopa County



0 2.5 5 7.5 10 Miles

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August 2011



# MAINTENANCE ACTIVITIES FY 2011 (N.W. AREA)

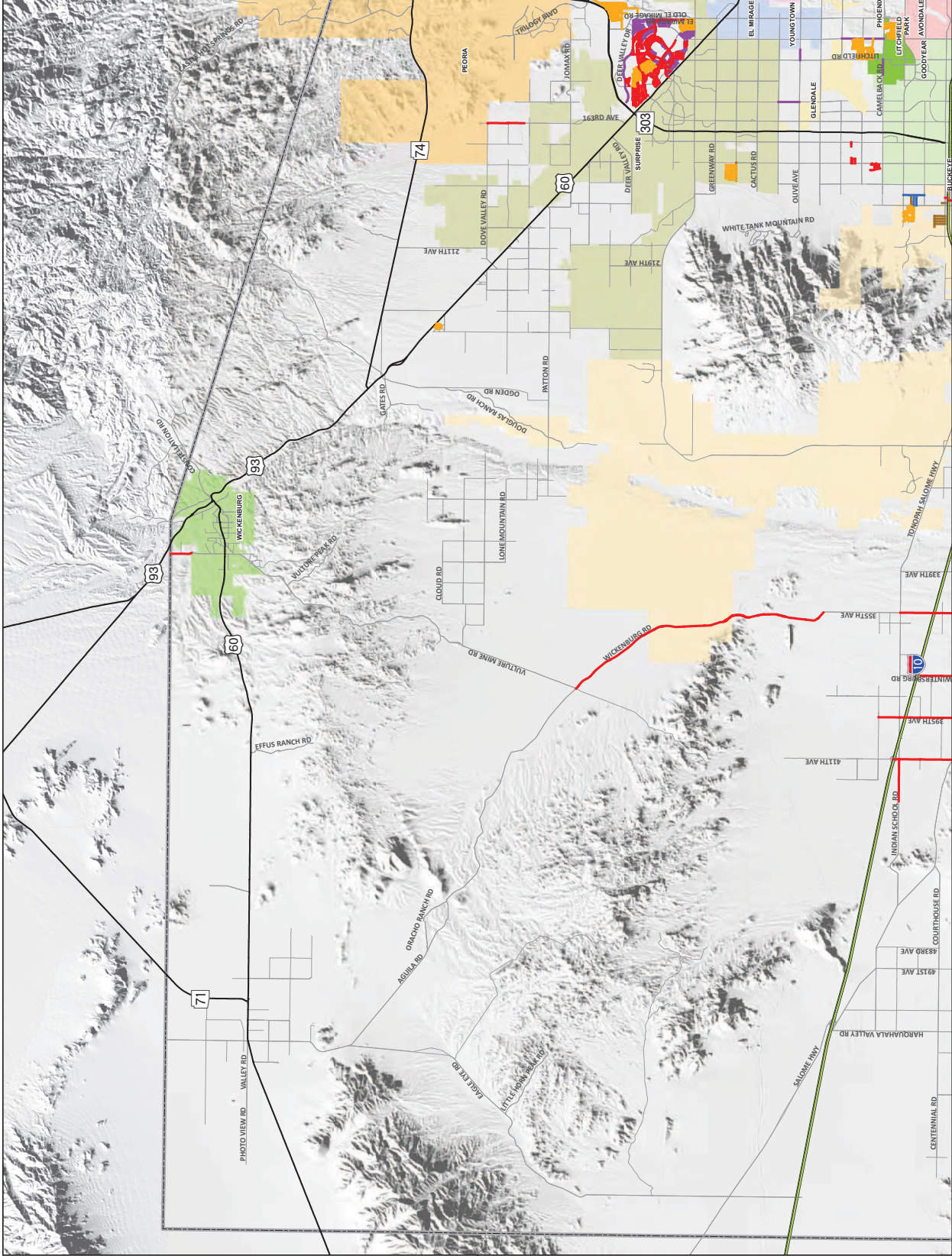
- Crack Fill
- Overlay
- Seal Coats
- Asphaltic Rubber
- Chip Seals
- Dust Palliative
- Interstate Highways
- U.S., State, or County Highways
- Arterial Roads
- Maricopa County



0 1.252.53.75 5 Miles

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Public Works GIS Division

August 2011



Map 5

# MAINTENANCE ACTIVITIES FY 2011 (N.E. AREA)

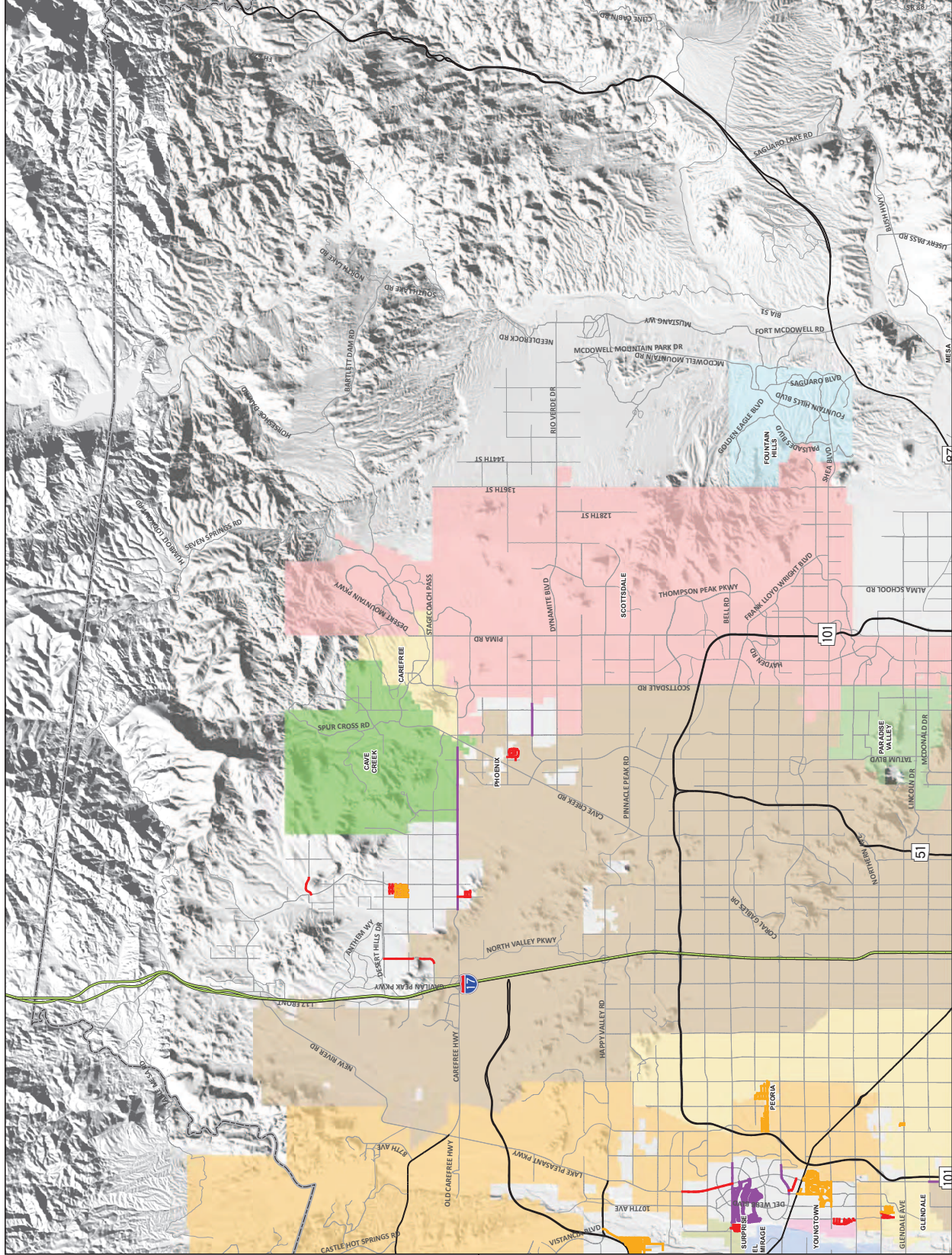
- Crack Fill
- Overlay
- Seal Coats
- Asphaltic Rubber
- Chip Seals
- Dust Palliative
- Interstate Highways
- U.S., State, or County Highways
- Arterial Roads
- Maricopa County



0 1.25 2.5 3.75 5 Miles

Produced by the Maricopa County  
Public Works GIS Division

August 2011





# MAINTENANCE ACTIVITIES FY 2011 (S.E. AREA)

- Crack Fill
- Overlay
- Seal Coats
- Asphaltic Rubber
- Chip Seals
- Dust Palliative
- Interstate Highways
- U.S., State, or County Highways
- Arterial Roads
- Maricopa County

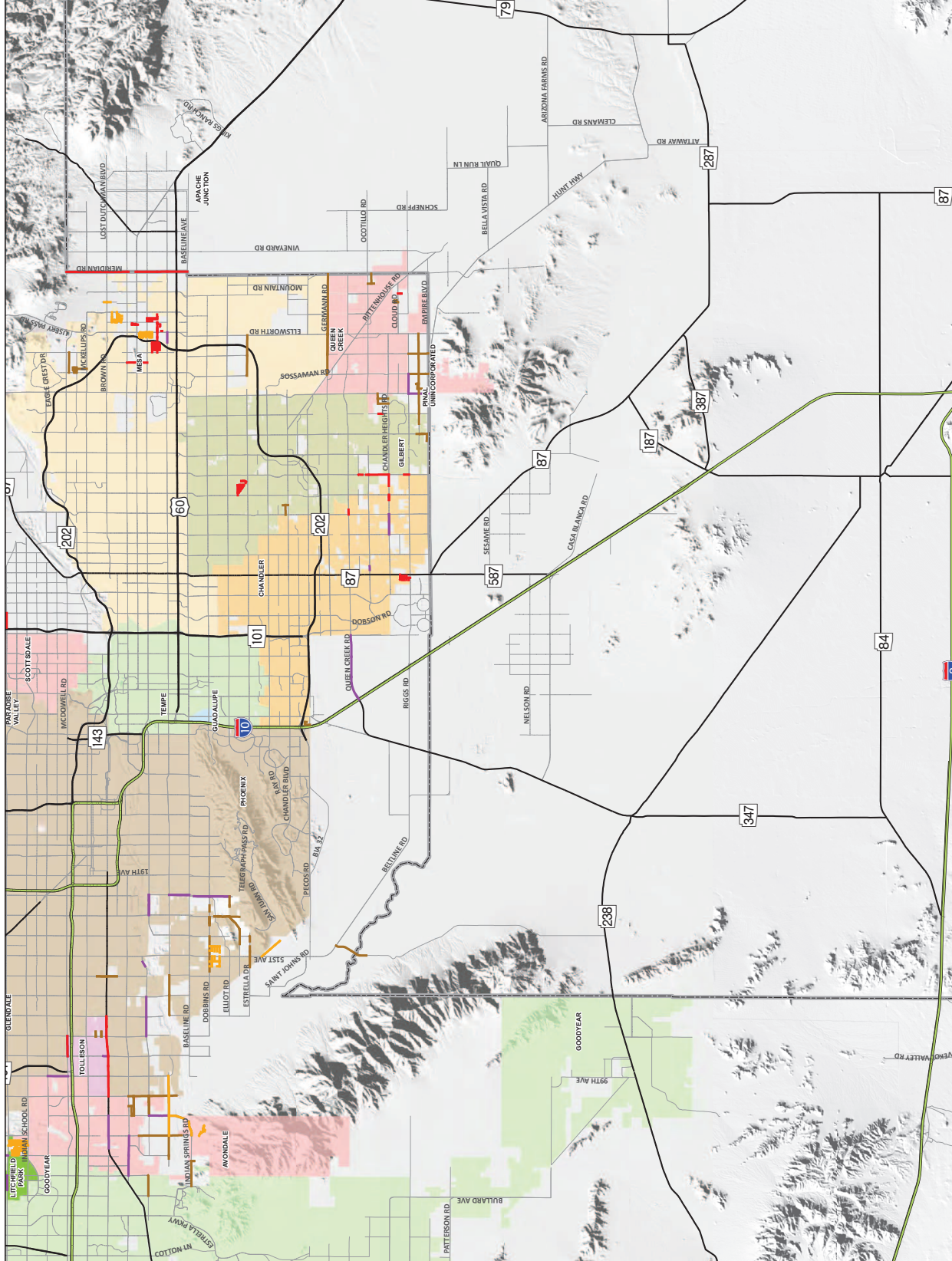


0 1.5 3 4.5 6 Miles

A horizontal scale bar with tick marks at 0, 1.5, 3, 4.5, and 6 miles.

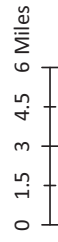
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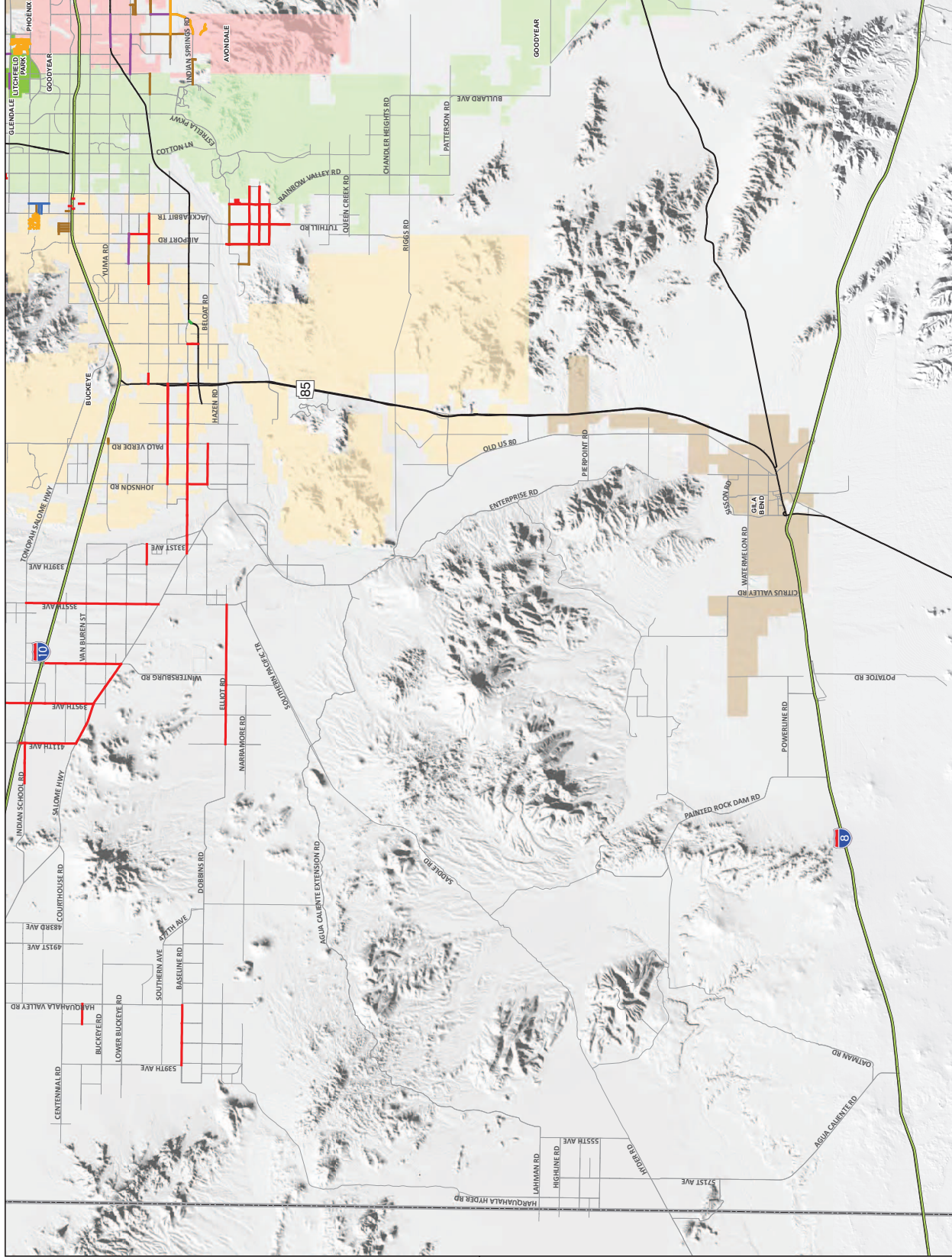
# MAINTENANCE ACTIVITIES FY 2011 (S.W. AREA)

- Crack Fill
- Overlay
- Seal Coats
- Asphaltic Rubber
- Chip Seals
- Dust Palliative
- Interstate Highways
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- Maricopa County



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August 2011



# Asset Management System

**Fiscal Year 2012**



**Programming & System Analysis**



**[www.maricopa.gov](http://www.maricopa.gov)**

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## INTRODUCTION

It is the policy of Maricopa County and the Department of Transportation to maintain effective internal controls to manage its Infrastructure Assets, and to maintain proper records regarding the use and disposition of those assets.

There is a necessity for Maricopa County Department of Transportation to safeguard and maintain Assets in order to receive the maximum benefit and to comply with State and Federal requirements regarding the use and disposition, and to properly account for its Infrastructure Assets for financial statement purposes.

An effort is taking place to provide transparency in how Maricopa County Department of Transportation provides services within the organization and to the County's constituents. As a result, Divisions are understanding and appreciating their roles in relation to developing and maintaining Infrastructure Inventory. Since the implementation of GASB 34, there has not been a comprehensive account of what is captured at the Division level. It is the intent of the Planning Division and Asset Management Team to educate, inform, develop and streamline Asset Management reporting.

## Background

Government entities were encouraged to adopt GASB (Governmental Accounting Standards Board) Statement 34, titled *Financial Statements and Management's Discussion and Analysis for State and Local Governments*, model to be in compliance with GAAP (Generally Accepted Accounting Principles) by June 15, 2001.

GASB is responsible for establishing GAAP for both state and local governments. GAAP sets the criteria that government must follow in order to obtain a "clean opinion" from auditors. A clean opinion means you have good credit and is very important when a state or local government wants to issue bonds, obtain financing for long-term construction projects, and obtain performance bonds.

GASB approved GASB 34 in June 1999, and it was the first time government entities were required to report the value of their infrastructure assets and develop methods and procedures for asset management systems. The goal of GASB 34 is to have financial statements reflect the financial health of government entities.

Governments that do not comply with GAAP may pay more to issue debt because the bonding agency will not be able to determine the financial health of the government entity. In addition, it would be increasingly difficult to obtain loans for capital projects when needed because of poor bond ratings.

Maricopa County has received three consecutive "adverse opinions" as a direct result

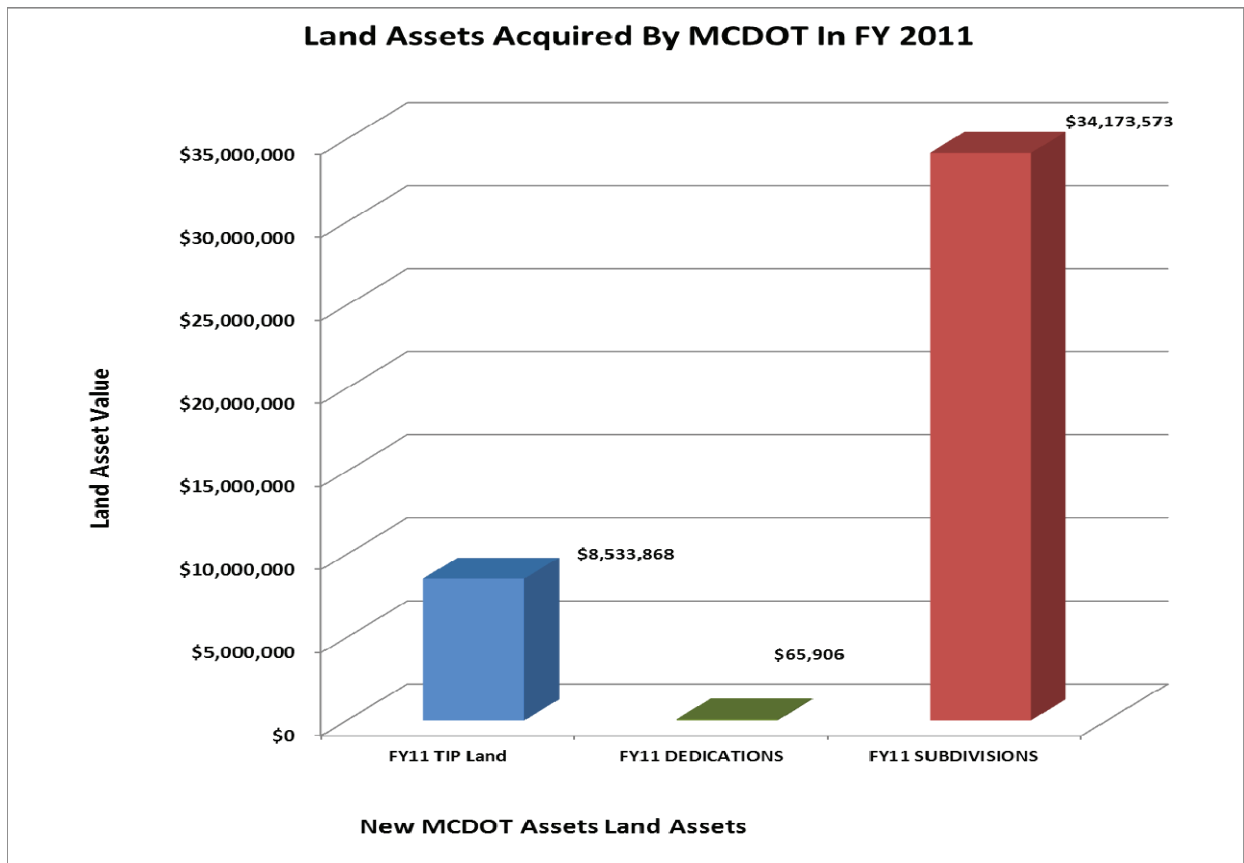
of how MCDOT and Flood Control are recording infrastructure, lack of internal controls and assessing value for non-TIP related assets.

### Real Estate

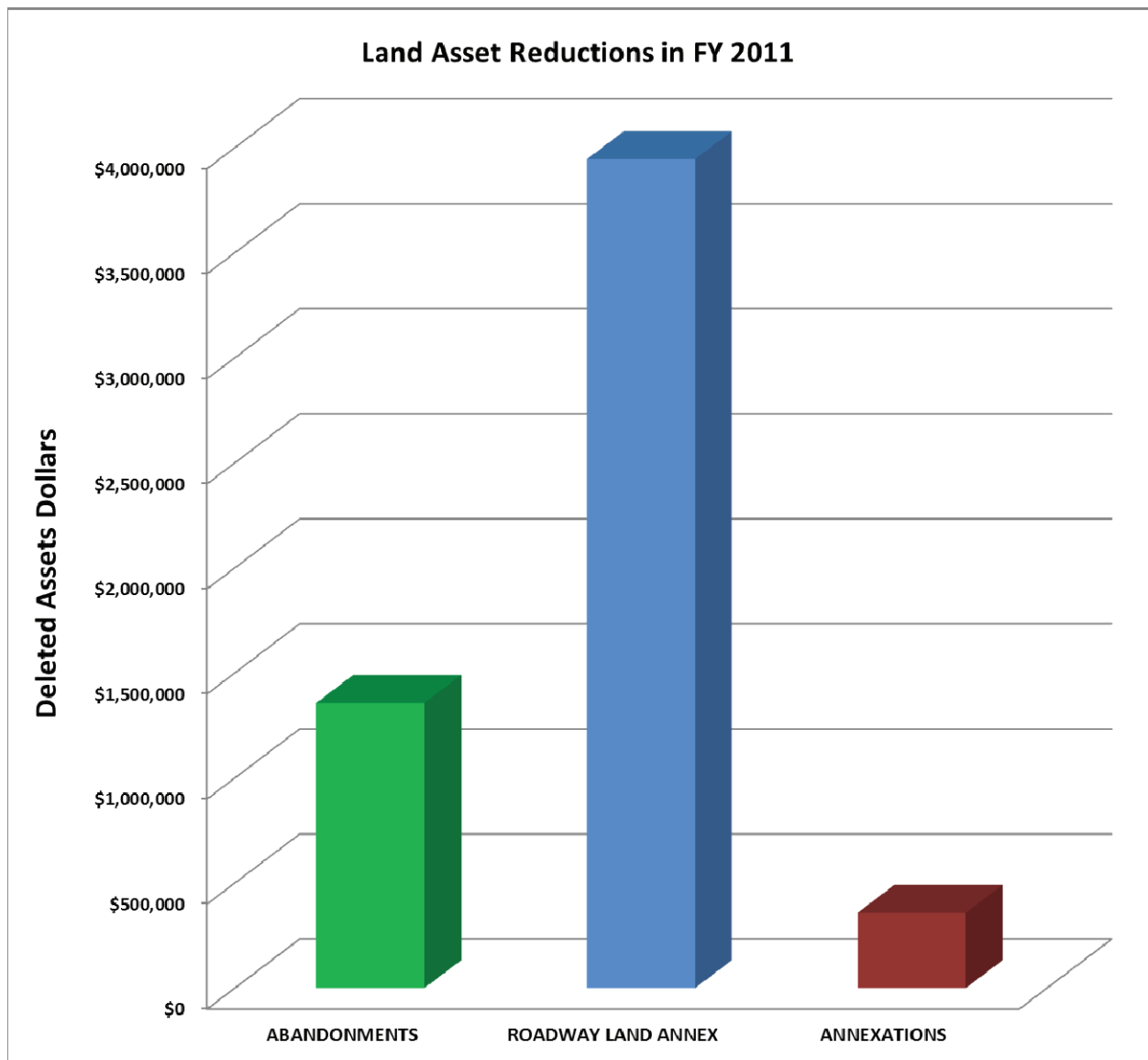
The Real Estate Division is responsible for Property Management, Acquisitions, and Property Engineering. The Real Estate Division plays an important role by providing the detailed account of land rights dispositions associated with MCDOT projects. All land rights activity is validated by resolutions, deeds, or Board of Supervisors approval and referenced within Real Estate database.

While much of this divisions activity is associated with acquisitions of right-of-way for Transportation TIP projects and Flood Control CIP, the Real Estate Division also processes municipal annexations, road declarations, road abandonment, and excess land sales. The Real Estate Division also maintains the records and documentation of those activities. The Board of Supervisors authorizes Transportation and Flood Control projects by adoption of resolutions authorizing the departments to spend money to acquire right of way, construct and maintain projects thus adding projects to the respective Asset Management Inventory

**Figure 1: FY 2011 Land Assets Acquired by MCDOT**



**Figure 2: FY 2011 Land Asset Reductions**



In FY11 Maricopa County added \$42.7 Million in land assets to the County infrastructure inventory. The predominate means of adding to County Assets has been the acceptance of subdivision right-of-way and roadways. The acceptance of subdivisions into the System resulted in 95% of the additional land added to the MCDOT inventory. Annexations by County municipalities is the primary means of land asset reduction to MCDOT’s Inventory.

**Traffic Signals**

Signals are either part of a TIP project or acquired via O&D of a development. When part of a TIP project, a signal light is added into MCDOT inventory on the date it is switched on. A designated MCDOT employee then provides a letter of completion.

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## Transportation Improvement Program (TIP)

The Transportation Improvement Program is a collaborative effort of Planning, Project Management and Finance. Within the program projects are identified, budgets and timelines are created for major construction projects lead by MCDOT. Projects are added to the TIP based on evaluations of scope, schedule, and budget and presented to the Transportation Advisory Board for recommendations to the Board of Supervisors.

Projects can include transportation studies, improvements to structures, signals, Low Volume Road paving and reconstruction of roadways. Not all of the projects result in an addition to the MCDOT infrastructure inventory. Some are expensed while others can be a part of an IGA where MCDOT recoups funds expended and a municipality assumes jurisdiction over the completed project. The future ownership/jurisdiction is typically identified through intergovernmental agreements (IGA).

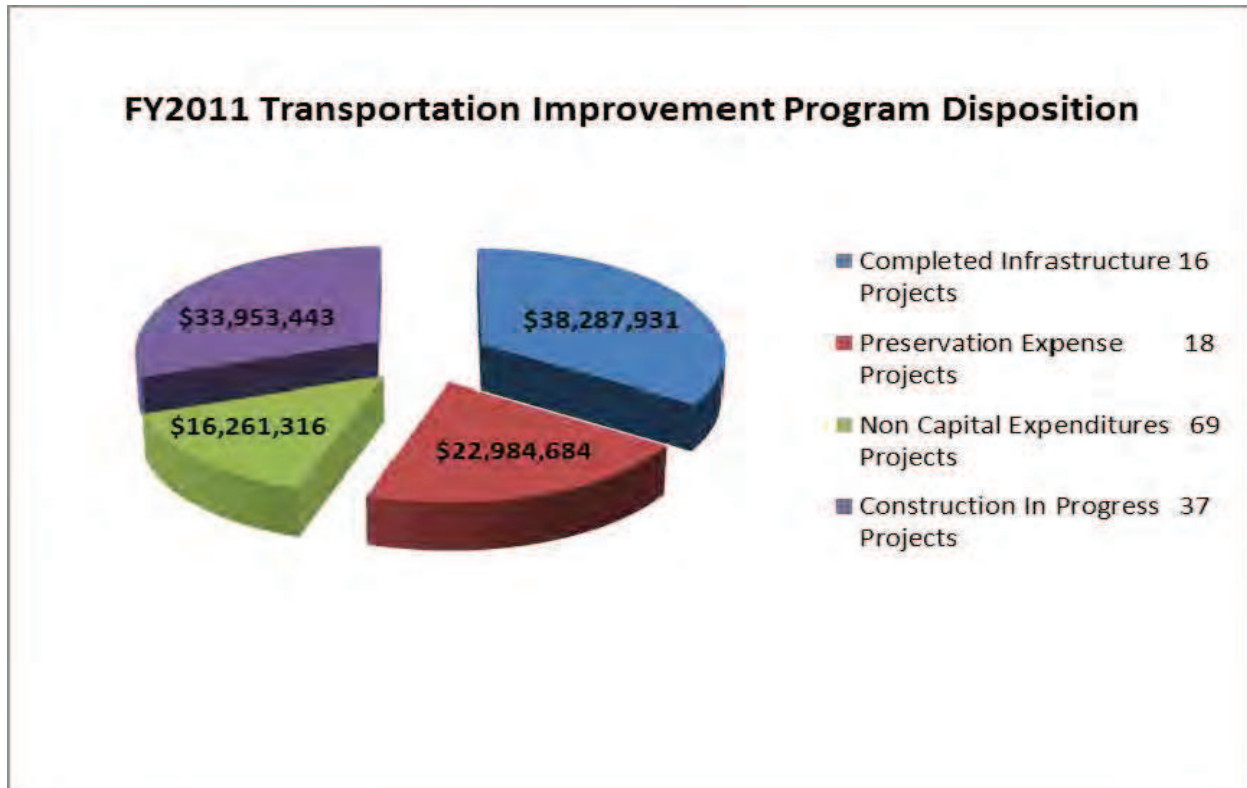
Once a project is complete, MCDOT staff prepares correspondence to the contractor and MCDOT internal customers that the project is complete and accepted into Maricopa County Department of Transportation inventory. There is a one-year warranty period. It is a timetable during which contractors are obligated to make any repairs as required by MCDOT.

**Table 1: FY 2011 Transportation Improvement Program**

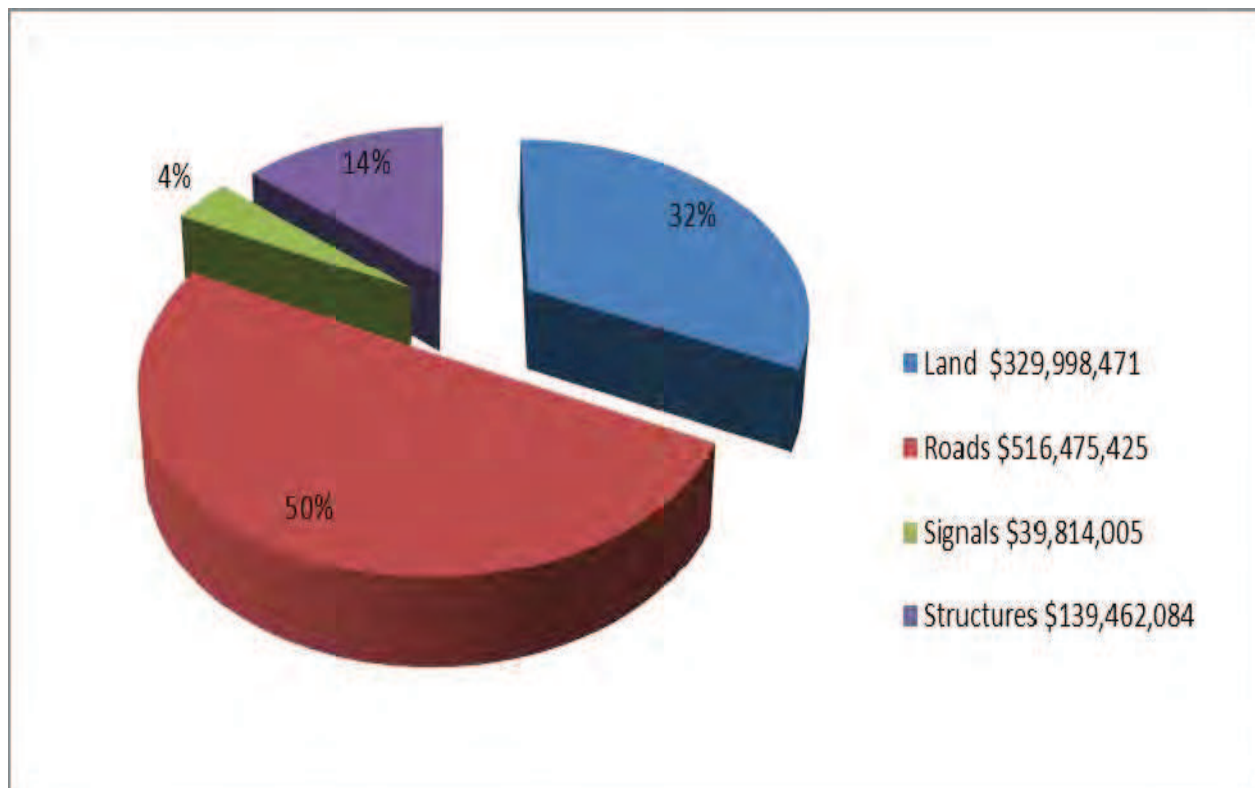
Completed Infrastructure	Preservation	Non Capital Expenses	Construction In Progress
16 Projects	18 Projects	69 Projects	37 Projects
\$38,287,931 Spent	\$22,984,684 Spent	\$16,261,316 Spent	\$33,953,443 Spent



**Figure 3: FY2011 Transportation Improvement Program Disposition**



**Figure 4: FY 2011 Maricopa County Assets Added by Percentage**



# Planning Division

**Editor: Chris Plumb**

**Graphic designer: Mirel Cristian**

