

S E R V I C E   S O L U T I O N S   S U C C E S S



# DEPARTMENT OF TRANSPORTATION

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# Roadway Terms

- **Roadway Construction and Maintenance**
  - **New roads**
  - **Reconstruction** (complete replacement, may address issues of drainage, subgrade failures, Right-of-Way changes, etc...)
  - **Resurfacing** (surface asphalt replacement; also including repair of damaged parkways, placing ADA accessibility elements, etc...)
  - **Microsurfacing** (placing a thin asphalt wearing surface on existing pavement)
  - **Traffic Signals** (at major intersections, flashers and school zone)
  - **Markings and Striping** (new roads and replacement of worn markings)
  - **Signage** (street name, regulatory, informational, etc..)
  - **Illumination** (street lights)
  - **Traffic calming** (Roundabouts, Triangles, Bulb-outs, Speed Humps)
  - **Sidewalks** (installation, ADA compliance and replacement of damaged areas)
  - **Medians** (maintenance of landscaped and un-landscaped medians)
  - **Parkways** (area from curb to back of sidewalk)



# Street Classifications

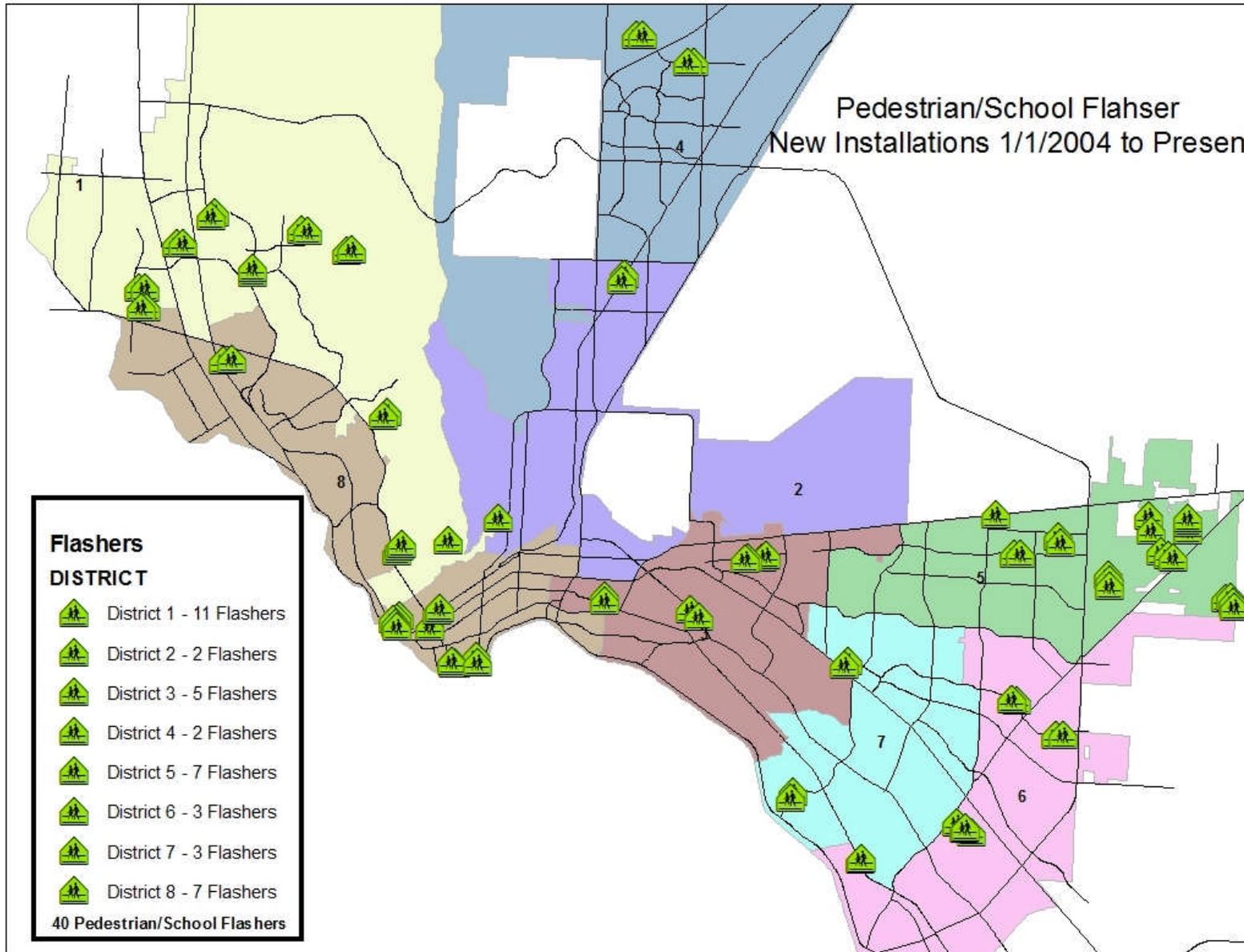
- **Local** (1,587 miles) – Designed exclusively to provide direct access to abutting property (i.e. residential street).
- **Collector** (150 miles) – Designed to collect traffic from local streets and connect with arterial streets and freeways (i.e. Thorn, Bob Mitchell, Stiles).
- **Minor Arterial** (191 miles) – Designed to disperse traffic between collector streets and other arterial streets (i.e. Lomaland; Vista del Sol; Sun Valley; Stanton).
- **Major Arterial** (245 miles) – Designed to carry high-volume traffic with
  - limited access control, restricted parking and channelized intersections (Montwood; Redd; Dyer; Lee Trevino)
- **Boulevard** – A broad street with Collector streets running along side it (Trowbridge, South of I-10; Montana, East of Airway, North Loop, East of Zaragosa)
- **Alleys** (144 miles) – A public way which provides for vehicular access to the back or sides of properties, as a secondary means of access.

**Total Street Inventory In Miles = 2,317**



# Pedestrian/School Flashers 2004 - Present

Representative District	Certificate of Obligations	School District / Private	Total Funding	Percent of Funding
1	\$178,559	\$211,667	\$390,226	27.13%
2	35,478	38,791	74,269	5.16%
3	55,238	118,632	173,870	12.09%
4	34,856	52,284	87,140	6.06%
5	135,423	203,134	338,557	23.54%
6	51,280	39,779	91,059	6.33%
7	24,927	52,882	77,809	5.41%
8	141,102	64,391	205,493	14.28%
<b>Grand Total</b>	<b><u>\$656,863</u></b>	<b><u>\$781,560</u></b>	<b><u>\$1,438,423</u></b>	



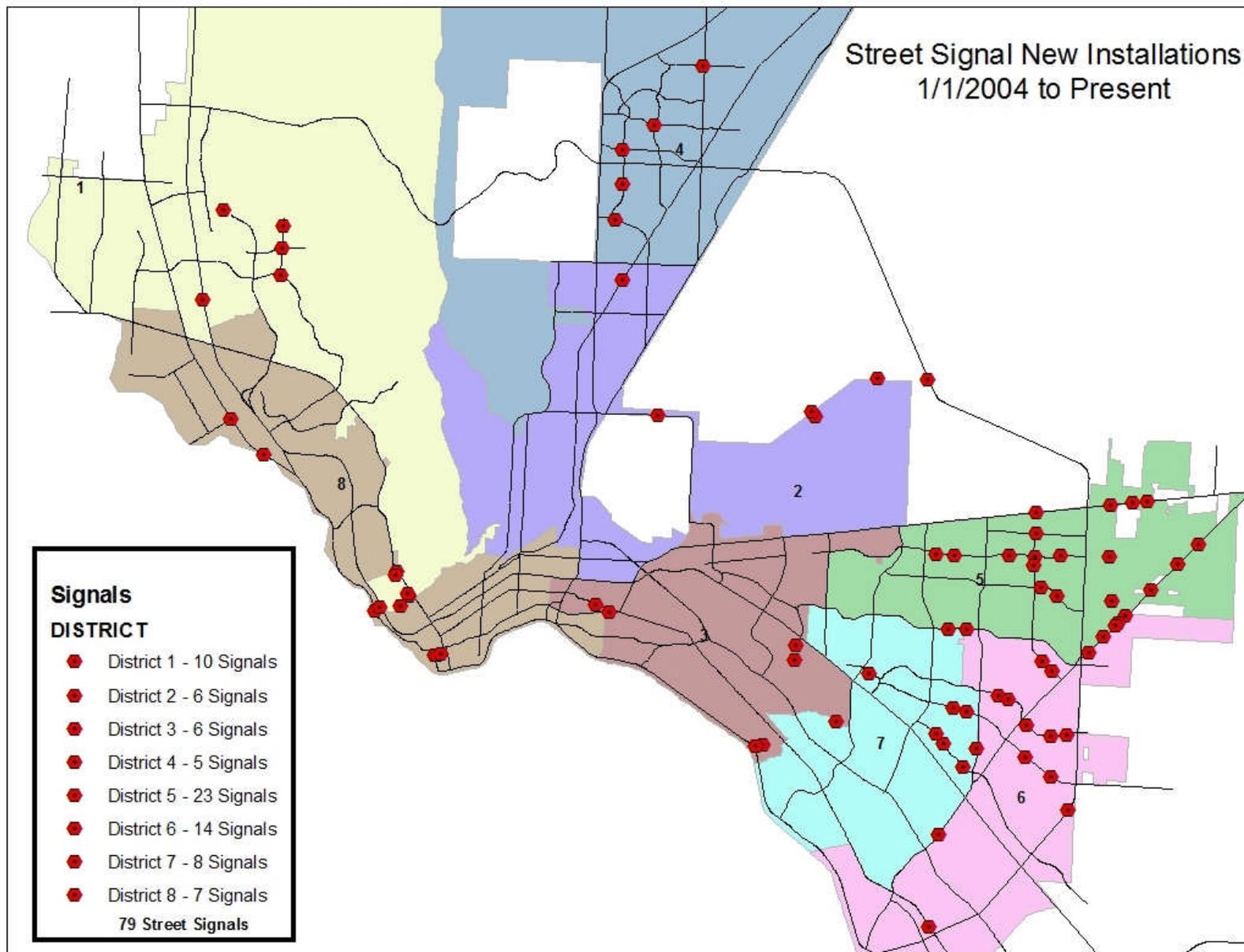


# Street Signals 2004 - Present

Representative District	Certificate of Obligations	Government Obligations	TXDoT (State)	Sun Metro (Federal)	Enhancements 2011	Total Funding	Percent of Funding
1	\$497,120	\$206,111	\$275,000	\$351,506	\$62,500	1,392,237	12.98%
2	365,672	206,111	275,000		62,500	909,283	8.48%
3	766,642	206,111	275,000		62,500	1,310,253	12.21%
4	654,356	206,111	275,000		62,500	1,197,967	11.17%
5	1,268,686	206,111	275,000		62,500	1,812,297	16.89%
6	884,379	206,111	275,000		62,500	1,427,990	13.31%
7	705,103	206,111	275,000		62,500	1,248,714	11.64%
8	634,389	206,111	275,000	250,498	62,500	1,428,498	13.32%
<b>Grand Total</b>	<b>\$5,776,347</b>	<b>\$1,648,888</b>	<b>\$2,200,000</b>	<b>\$602,004</b>	<b>\$500,000</b>	<b>10,727,239</b>	



### Street Signal New Installations 1/1/2004 to Present





# Resurfacing 2004 - Present

Representative District	Certificate of Obligations	Percent of Funding
1	\$6,556,042	15.56%
2	6,429,816	15.26%
3	4,025,621	9.55%
4	5,540,093	13.15%
5	3,202,039	7.60%
6	2,742,050	6.51%
7	5,311,920	12.61%
8	8,327,225	19.76%
<b>Grand Total</b>	<b>\$42,134,806</b>	



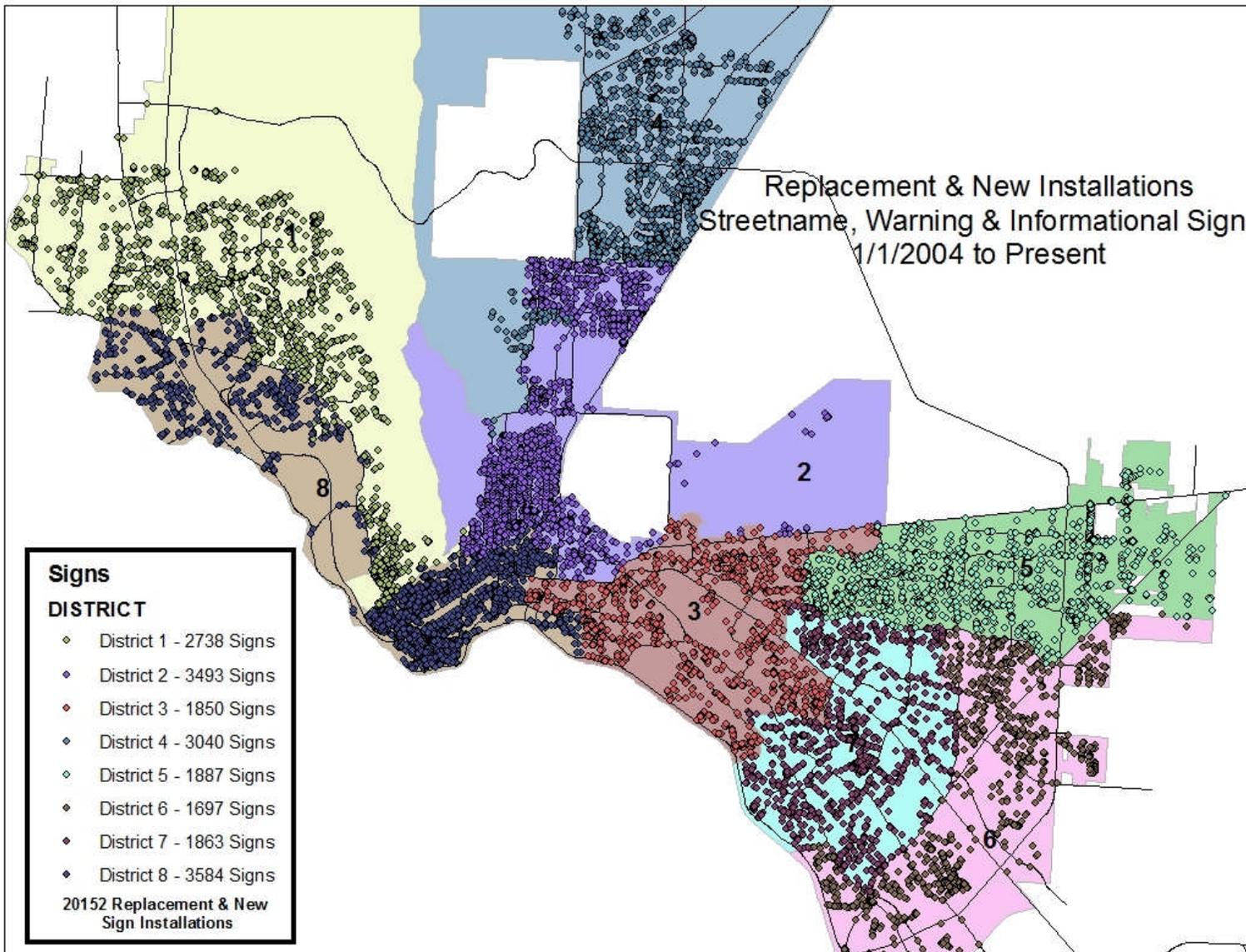
# Street and Sidewalk 2004 – Present

Representative District	Street Certificate of Obligations	Street Government Obligations	Street Storm 2006	Sidewalk ADA Compliance	Sidewalk Gap Program	Total Funding	Percent of Funding
1	\$6,916,667	\$1,981,761	\$19,293,179	\$625,000	\$81,250	\$28,897,857	22.77%
2	6,166,000	2,736,126	2,701,985	625,000	81,250	\$12,310,361	9.70%
3	12,623,550	649,621	705,520	625,000	81,250	\$14,684,941	11.57%
4	5,237,000	187,500	2,994,595	625,000	81,250	\$9,125,345	7.19%
5	6,683,333	2,748,311	5,581	625,000	81,250	\$10,143,475	7.99%
6	4,294,250	4,799,380	139,335	625,000	81,250	\$9,939,215	7.83%
7	16,066,584	3,038,038	693,052	625,000	81,250	\$20,503,924	16.16%
8	6,794,250	4,686,761	9,096,857	625,000	81,250	\$21,284,118	16.77%
<b>Grand Total</b>	<b>\$64,781,634</b>	<b>\$20,827,498</b>	<b>\$35,630,104</b>	<b>\$5,000,000</b>	<b>\$650,000</b>	<b>\$126,889,236</b>	



# Signs & Markings 2004 – Present

Representative District	Certificate of Obligations	General Obligations (Red Light Camera)	Total Funding	Percent of Funding
1	\$525,000	\$18,750	\$543,750	12.50%
2	525,000	18,750	543,750	12.50%
3	525,000	18,750	543,750	12.50%
4	525,000	18,750	543,750	12.50%
5	525,000	18,750	543,750	12.50%
6	525,000	18,750	543,750	12.50%
7	525,000	18,750	543,750	12.50%
8	525,000	18,750	543,750	12.50%
<b>Grand Total</b>	<b>\$4,200,000</b>	<b>\$150,000</b>	<b>\$4,350,000</b>	





# Street ROW Improvements 2004 – Present

Representative District	Certificate of Obligations	General Obligations	Total Funding	Percent of Funding
1				0.00%
2	\$2,500,000	3,673,626	6,173,626	55.88%
3				0.00%
4				0.00%
5				0.00%
6				0.00%
7				0.00%
8	\$2,500,000	\$2,375,000	4,875,000	44.12%
<b>Grand Total</b>	<b>\$5,000,000</b>	<b>\$6,048,626</b>	<b>\$11,048,626</b>	



# Street Medians 2004 – Present

Representative District	General Obligations	ASARCO (Particulate Matter Reduction Project)	Total Funding	Percent of Funding
1			\$0	0.00%
2	1,540,271		\$1,540,271	17.39%
3	\$428,986		\$428,986	4.84%
4	\$3,048,222		\$3,048,222	34.42%
5	\$1,330,428		\$1,330,428	15.02%
6	\$428,986	373,841	\$802,827	9.07%
7	\$1,330,429	373,841	\$1,704,270	19.26%
8			\$0	0.00%
<b>Grand Total</b>	<b>\$8,107,322</b>	<b>\$747,682</b>	<b>\$8,855,004</b>	



# Other Funding 2004 – Present

## Other Funding not designated by Representative District

### Certificates of Obligations:

Arterial Lighting	\$3,000,000
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### Community Development Block Grants:

Roadways	\$16,241,345
Sidewalks	2,036,337
Audible Pedestrian Signals	583,639

### Palo Verde Rewards:

Arterial Lighting	\$1,900,000
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**This Funding is not included in the Use of Funding Summary**





## Use of Funding Summary 2004 - Present

Representative District	1	2	3	4	5	6	7	8	Total Funding
<b>Signs &amp; Markings</b>									
CO's									
GO's (Red Light Camera)	\$525,000 18,750	\$4,200,000 150,000							
<b>Street ROW Improvements</b>									
CO's		\$2,500,000						\$2,500,000	\$5,000,000
GO's		3,673,626						2,375,000	6,048,626
<b>Street Medians</b>									
GO's		1,540,271	\$428,986	\$3,048,222	\$1,330,428	\$428,986	\$1,330,429		\$8,107,322
ASARCO						373,841	373,841		747,682
<b>CO's</b>	\$14,673,388	15,496,966	\$17,996,051	\$11,991,305	\$11,814,481	\$8,496,959	\$22,633,534	\$18,921,966	\$122,024,650
<b>GO's</b>	2,187,872	8,681,134	1,284,718	3,441,833	4,284,850	5,434,477	4,574,578	7,267,872	37,157,334
<b>TXDoT</b>	275,000	275,000	275,000	275,000	275,000	275,000	275,000	275,000	2,200,000
<b>Sun Metro</b>	351,506	0	0	0	0	0	0	250,498	602,004
<b>Enhancements</b>	62,500	62,500	62,500	62,500	62,500	62,500	62,500	62,500	500,000
<b>Private</b>	211,667	38,791	118,632	52,284	203,134	39,779	52,882	64,391	781,560
<b>Storm 2006</b>	19,293,179	2,701,985	705,520	2,994,595	5,581	139,335	693,052	9,096,857	35,630,104
<b>ADA Compliance</b>	625,000	625,000	625,000	625,000	625,000	625,000	625,000	625,000	5,000,000
<b>Sidewalk Gap</b>	81,250	81,250	81,250	81,250	81,250	81,250	81,250	81,250	650,000
<b>GO'S (Red Light Camera)</b>	18,750	18,750	18,750	18,750	18,750	18,750	18,750	18,750	150,000
<b>Asarco</b>	0	0	0	0	0	373,841	373,841		747,682
<b>Grand Total</b>	<b>\$37,780,112</b>	<b>\$27,981,376</b>	<b>\$21,167,421</b>	<b>\$19,542,517</b>	<b>\$17,370,546</b>	<b>\$15,546,891</b>	<b>\$29,390,387</b>	<b>\$36,664,084</b>	<b>\$205,443,334</b>

Source: Information based on combined projects managed by Engineering and Construction Management and El Paso Department of Transportation. Included are projects both complete and in process. Presentation not guaranteed to include all activity.



# Tax Year 2011

	<b>Base Value</b>	<b>2011 Net Taxable Value</b>	<b>TRZ Captured Value</b>	<b>Portion due to New Construction</b>	<b>% of New Construction</b>
<b>TRZ No. 2</b>	1,274,959,125	1,362,356,153	87,397,028	31,658,720	36%
<b>TRZ No. 3</b>	108,685,797	118,665,402	9,979,605	7,582,429	76%
<b>TOTAL VALUE</b>	1,383,644,922	1,481,021,555	97,376,633	39,241,149	40%
<b>Estimated Property Taxes</b>	9,044,887	9,681,438	636,551	256,519	
<b>Debt Service Payment</b>			955,763		
<b>Estimated Shortfall</b>					<b>(319,212)</b>



# Revenue Comparison

	<b>TTI Estimated Revenue</b>	<b>TRZ Captured Revenue</b>	<b>Variance</b>
<b>TRZ No. 2</b>	133,994	575,426	(441,432)
<b>TRZ No. 3</b>	13,937	65,706	(51,769)
<b>TOTAL ESTIMATED REVENUE</b>	147,931	641,132	(493,201)



# Chapter 380 Agreements Estimated FY 2013 Impact

## Multi-Family Housing:

NLIGP	\$180,000	Property Taxes
Hueco Valley Residential Partners	\$165,000	Property Taxes
Quarry Cave	\$80,000	Property Taxes
EPT The Reserve at Sandstone Ranch	\$60,000	Property Taxes
1500 Hope, LLC	\$42,000	Property Taxes
Other (Tropicana, Canyon Sq, Desert Villas)	\$72,758	Property Taxes

## Other 380 Agreements:

Medical Center of the Americas	\$3,000,000	Impact Fund Grant
UTEP Regional Cyber & Energy Security	\$580,000	Impact Fund Grant
Don Quixote (Amended)	\$193,640	Hotel Occupancy Tax Rebate
Don Quixote (Amended)	\$184,000	Parking and Event Room Block Rate
Don Quixote (Amended)	\$24,720	Sales Tax Rebate
Don Quixote (Amended)	\$8,240	Mixed Beverage Tax Rebate
HUB of Human Innovation Inc.	\$325,000	Impact Fund Grant
Champlain Cable	\$20,000	Property Tax Rebate

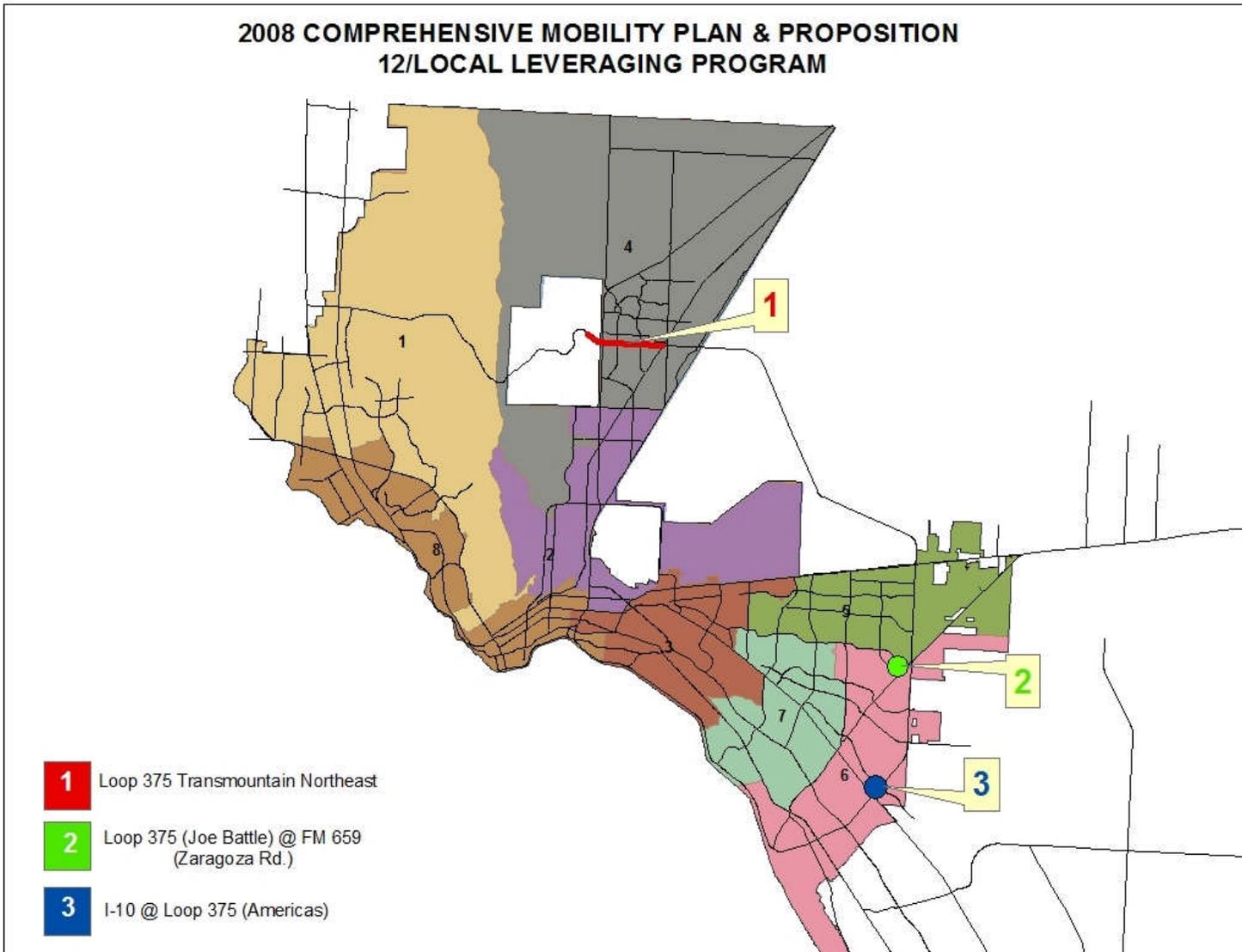


# Estimated Impact FY 2013

	Base Value	2011 Net Taxable Value	TRZ Captured Value	Portion due to New Construction	% of New Construction
TRZ No. 2	1,274,959,125	1,362,356,153	87,397,028	31,658,720	36%
TRZ No. 3	108,685,797	118,665,402	9,979,605	7,582,429	76%
<b>TOTAL VALUE</b>	<b>1,383,644,922</b>	<b>1,481,021,555</b>	<b>97,376,633</b>	<b>39,241,149</b>	<b>40%</b>
<b>Estimated Property Taxes</b>	<b>9,044,887</b>	<b>9,681,438</b>	<b>641,132</b>	<b>258,365</b>	
<b>Debt Service Payment</b>			<b>1,485,000</b>		
<b>Estimated Shortfall for Debt Service</b>				<b>(843,868)</b>	
<b>380 agreements</b>				<b>(599,758)</b>	
<b>Total Estimated Impact to General Fund</b>				<b>(1,443,626)</b>	



**2008 COMPREHENSIVE MOBILITY PLAN & PROPOSITION  
12/LOCAL LEVERAGING PROGRAM**





## 2008 Comprehensive Mobility Plan and Proposition 12/Local Leveraging Program

Project	Description	District	Funding (millions)	Construction Progress (%)	Estimated Completion
<b>Loop 375 Transmountain Northeast</b>	Dyer to US 54 Build 4 main lanes - Including interchange underpass at US 54	4	80	16%	Summer 2014
<b>Loop 375 (Joe Battle) @ FM 659 (Zaragoza Rd.)</b>	Interchange improvements, Including 2 connectors	6	32	15%	Fall 2014
<b>I-10 @ LP 375 (Americas)</b>	Interchange improvements, Including construction of direct connectors	6	146	45%	Winter 2013

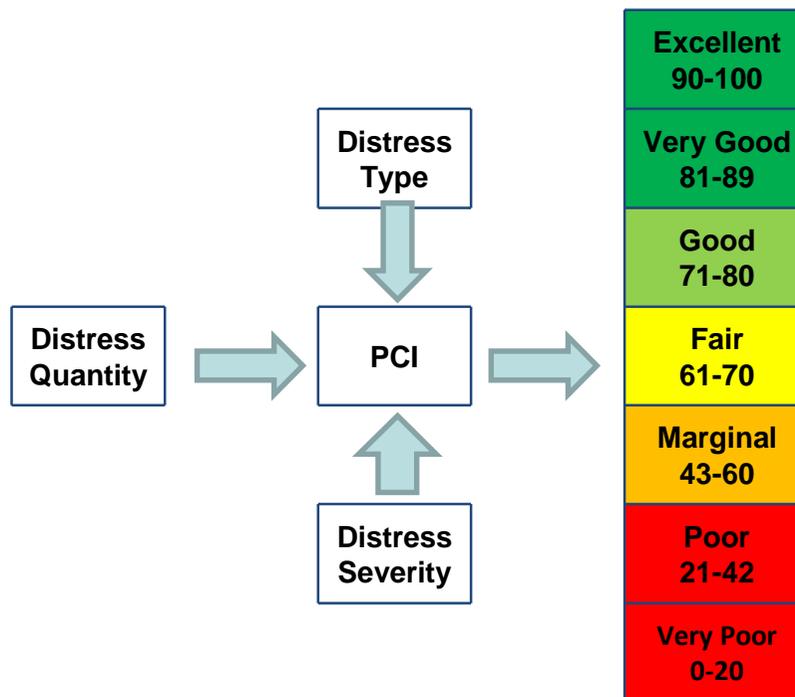


# Pavement Management System

- A designed, planned approach to pavement restoration and maintenance.
- Recommends proper and cost-effective maintenance procedures for maximizing the life of the structure.
- Will track and predict future, estimated costs and pavement conditions based on programmed level of rehabilitation.
- Allows for long term planning and scheduled rehabilitation activities.

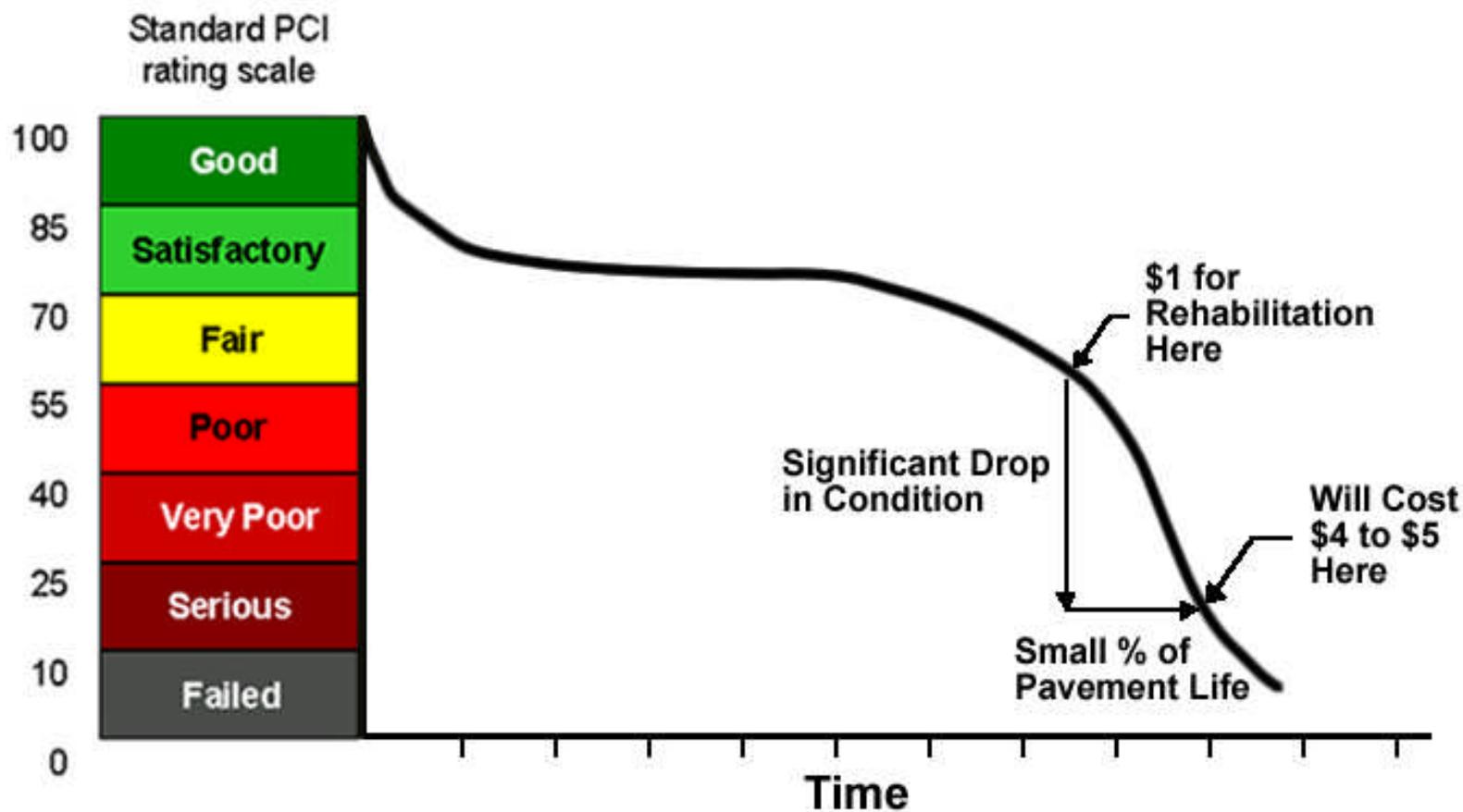


# City of El Paso Condition Rating Scale





# Reason for Pavement Management





# Micro Paver

- A software program created by the Army Corps of Engineers on behalf of the Department of Defense, with ongoing development and support.
- Used by all federal facilities, including military installations to manage airfields and roadway infrastructure.
- Used by State Departments of Transportation and Cities nation-wide and it is considered to be the industry standard.
- Utilizes and interfaces with the City of El Paso's existing Geographical Information System.



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The US Army Corps of Engineers developed Micro PAVER at their Construction Engineering Research Laboratory in Champaign, Illinois for road and airfield pavement maintenance management on military bases. In 1979 the American Public Works Association (APWA) through its Research Foundation initiated a technology transfer. Funding for this action was a \$250,000 cooperative effort of 80 local agencies in the United States and Canada who took part in testing and evaluating the PAVER software. Originally, a mainframe time-sharing based system PAVER has been modified for use on microcomputers and re-titled: Micro PAVER.

Micro PAVER is currently being used by over 600 cities, counties, airports and private consulting firms. Micro PAVER's Pavement Condition Index (PCI) methodology recently received the American Society for Testing and Materials (ASTM) standard D6433-99. Receipt of this standard means that Micro PAVER is the only Pavement Management System to have received an ASTM standard designation. Standard D6433-99 is the only pavement rating methodology recognized for rating road and parking lot pavements. This standard, together with Micro PAVER's earlier receipt of ASTM Standard D5340-93 for rating the condition of airfield pavements, makes Micro PAVER's PCI the standard for describing the condition of all pavement uses.

In addition to being an ASTM standard Micro PAVER's approach to pavement maintenance management also provides full compliance with the Modified Approach to accounting for infrastructure in the Government Accounting Standards Board (GASB) Standard 34.

Micro PAVER is also the pavement management system adopted by the Federal Aviation Administration, US Army, US Air Force, US Navy and Air National Guard. Feedback on performance and requests for enhancements from these users forms the basis for an ongoing process of program modification. As these modifications are released for general distribution they are provided to Users' Group members at no additional cost. User support and responding to requests for software modifications/enhancements is the most critical element in the long-term success of a PMS. Quite a few PMS software packages have come and gone in the last twenty years because their proponents were unable or unwilling to provide the support and responsiveness users required. One of the primary strengths of Micro PAVER lies in the long-term durability of Corps of Engineers and APWA involvement in supporting user software, information and training needs.

- [Micro PAVER home](#)
- [V5.2 update/patch - released 7/04](#)
- [Training Opportunities](#)
- [Why Manage Pavement Maintenance?](#)
- [Program Elements](#)
- [V5.2 Improvements](#)
- [Managing Airport Pavements](#)
- [Comparison of Pavement Management Systems](#)
- [5.2 downloadable demo](#)
- [Pavement Management Sites on the Internet](#)
- [Pavement Management Items in the APWA Catalog](#)

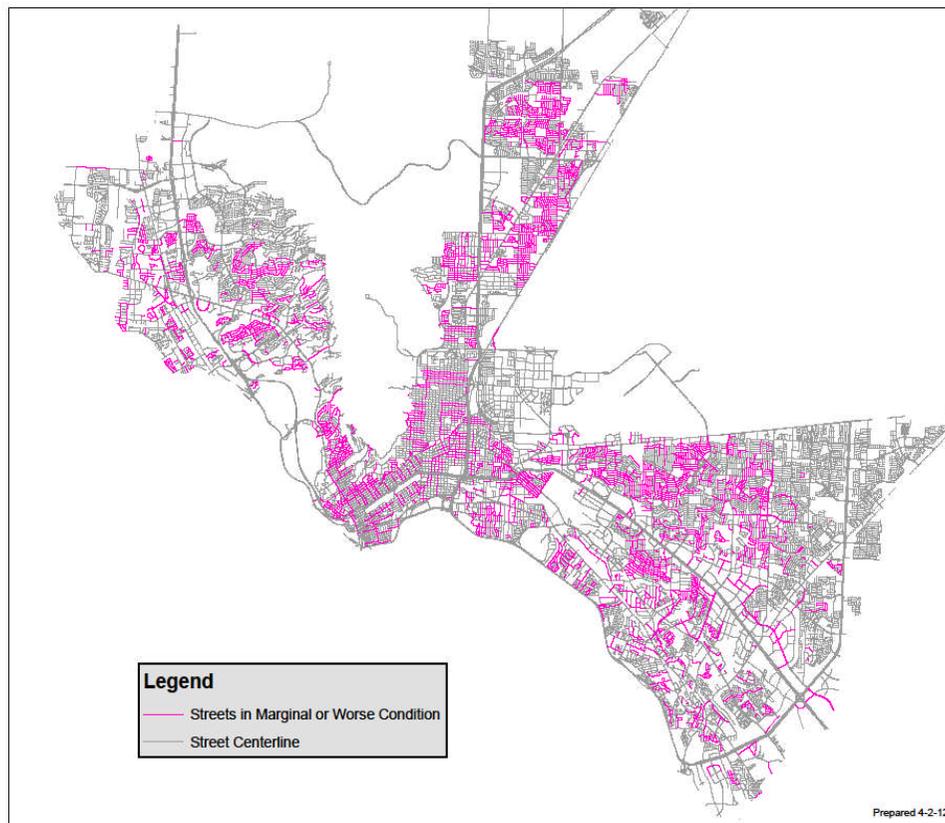
[paver@apwa.net](mailto:paver@apwa.net)

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# Resurfacing Needs

- **Map showing streets currently eligible to be resurfaced**



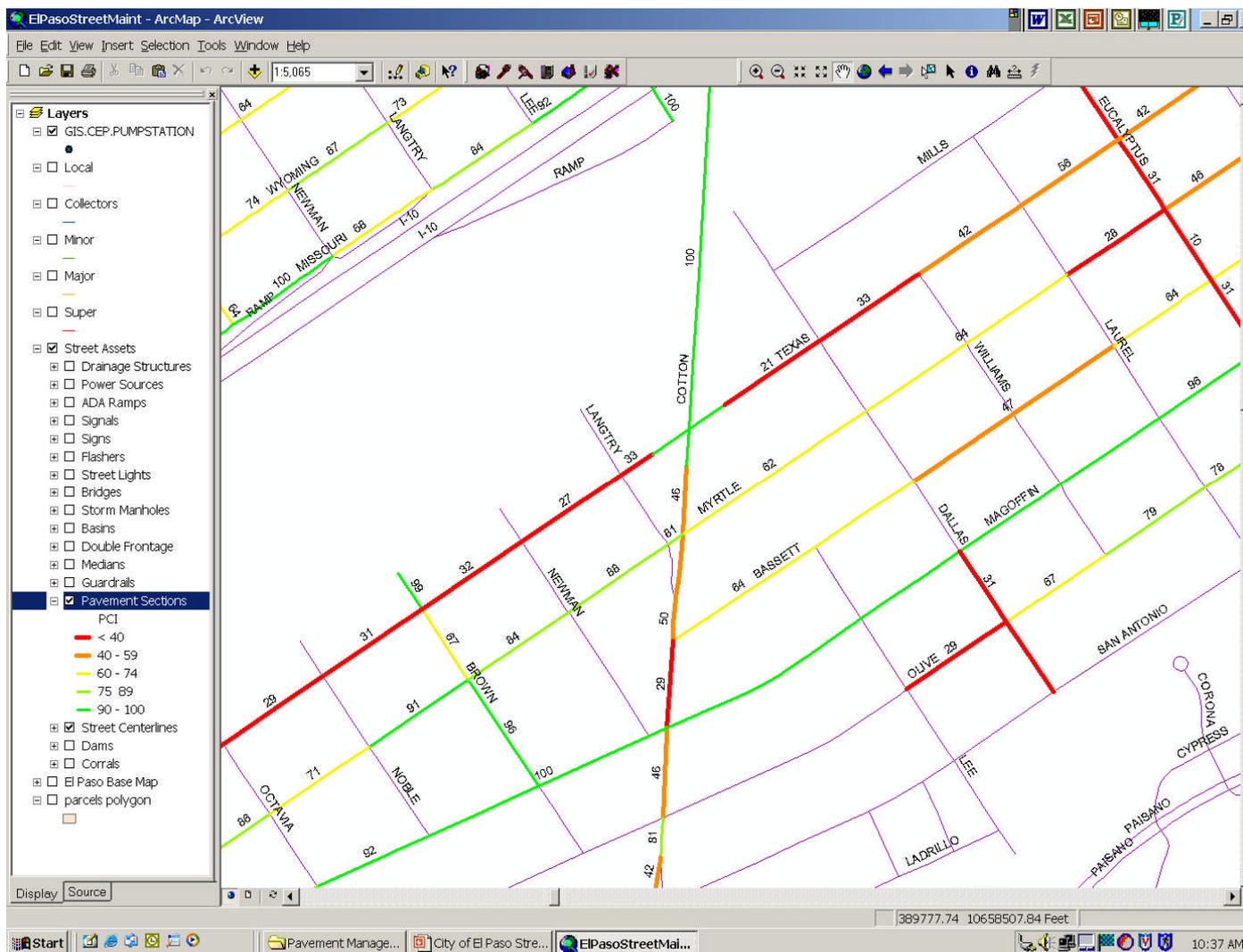
Estimated yearly costs in 2012 Dollars to complete system cycles for various periods  
Cycle (Years)

5	10	20	25	30	50
\$ 147,728,157	\$ 73,864,078	\$ 36,932,039	\$ 29,545,631	\$ 24,621,359	\$ 14,772,815



# Cityworks Interface

DEPARTMENT OF TRANSPORTATION





# Internet Based Pavement Condition Viewer

**City of El Paso, Texas Pavement Condition Viewer**  
City of El Paso Department of Transportation

**PavementCondition: PIEDRAS P**  
**Pavement Condition Index (PCI)**  
**73.74**  
**Estimated resurfacing costs today**  
**\$158,786.80**  
**Funding allotment required today to resurface this street is estimated to be:**  
**\$314,877,434.00**  
*\*2012 resurfacing allocation is \$3 million.*  
[Zoom to](#)

Enter an input address, click locate, and the application will zoom into the specified address. Address must be in the following format: 7968 San Paulo, El Paso.  
  
  
 You can also search for an intersection. To do this, the streets must be separated by the '&' symbol. For example: Yarbrough & North Loop, El Paso.  
 Once the map zooms in to the desired address, you can click on a street



# Optimal Funding Program

NTMP	\$4,000,000	11.6%
Flashers, Roundabouts/Signals	2,600,000	7.6%
Markings & Striping	1,500,000	4.4%
Signs	250,000	.7%
Sidewalks	1,000,000	2.9%
Median Landscaping	1,000,000	2.9%
Resurfacing Program	24,000,000	69.9%
<b>Total Optimal Funding Level</b>	<b><u>\$34,350,000</u></b>	



# \$30 Million Funding Program

NTMP	\$3,480,000	11.6%
Flashers, Roundabouts/Signals	2,280,000	7.6%
Markings & Striping	1,320,000	4.4%
Signs	210,000	.7%
Sidewalks	870,000	2.9%
Median Landscaping	870,000	2.9%
Resurfacing Program	20,970,000	69.9%
<b>Total Funding Level</b>	<b><u>\$30,000,000</u></b>	



# \$25 Million Funding Program

NTMP	\$2,900,000	11.6%
Flashers, Roundabouts/Signals	1,900,000	7.6%
Markings & Striping	1,100,000	4.4%
Signs	175,000	.7%
Sidewalks	725,000	2.9%
Median Landscaping	725,000	2.9%
Resurfacing Program	17,475,000	69.9%
<b>Total Funding Level</b>	<b><u>\$25,000,000</u></b>	

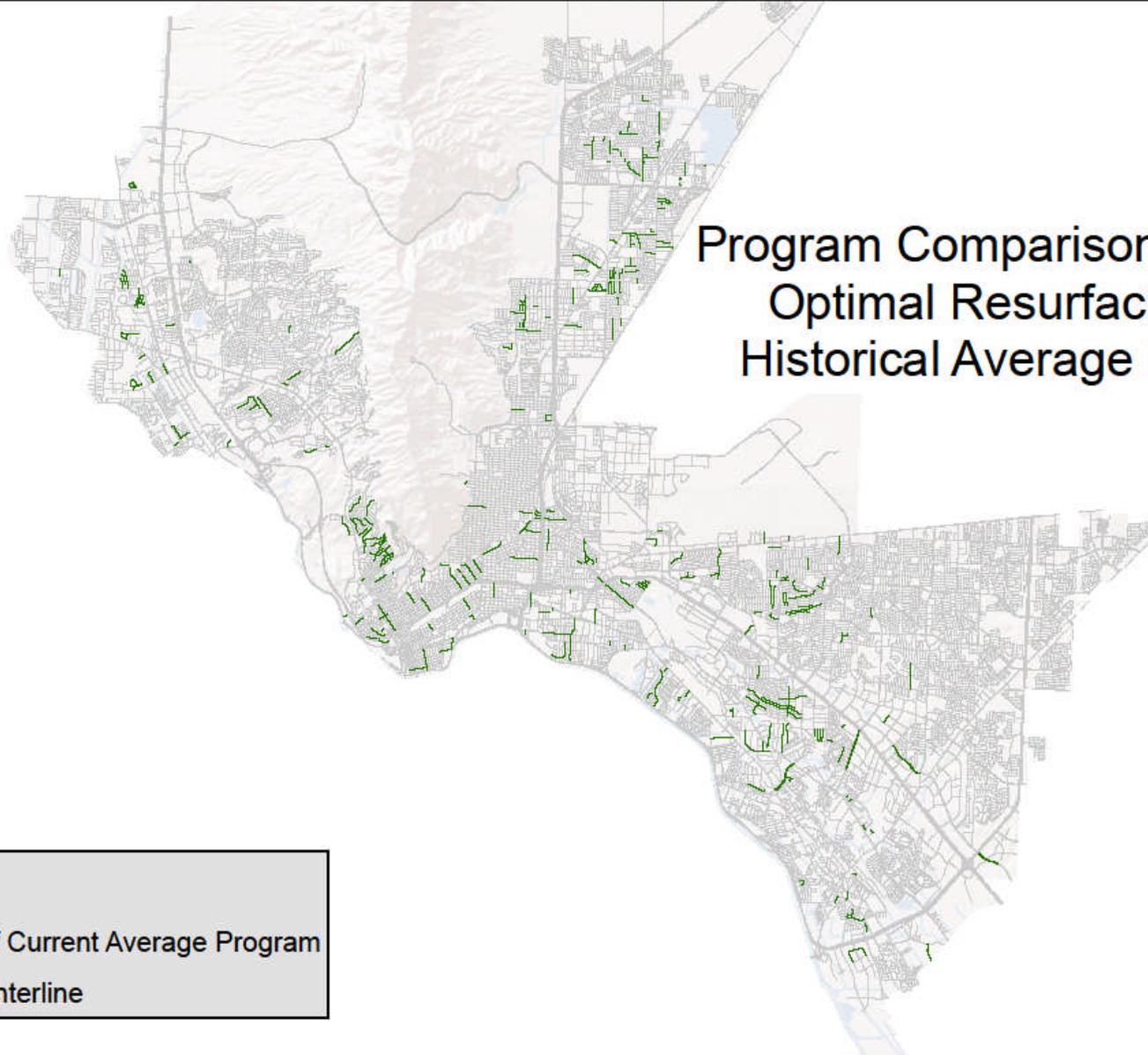


# \$20 Million Funding Program

NTMP	\$2,320,000	11.6%
Flashers, Roundabouts/Signals	1,520,000	7.6%
Markings & Striping	8800,000	4.4%
Signs	140,000	.7%
Sidewalks	580,000	2.9%
Median Landscaping	580,000	2.9%
Resurfacing Program	13,980,000	69.9%
<b>Total Funding Level</b>	<b><u>\$20,000,000</u></b>	



## Program Comparison Between Optimal Resurfacing and Historical Average Program

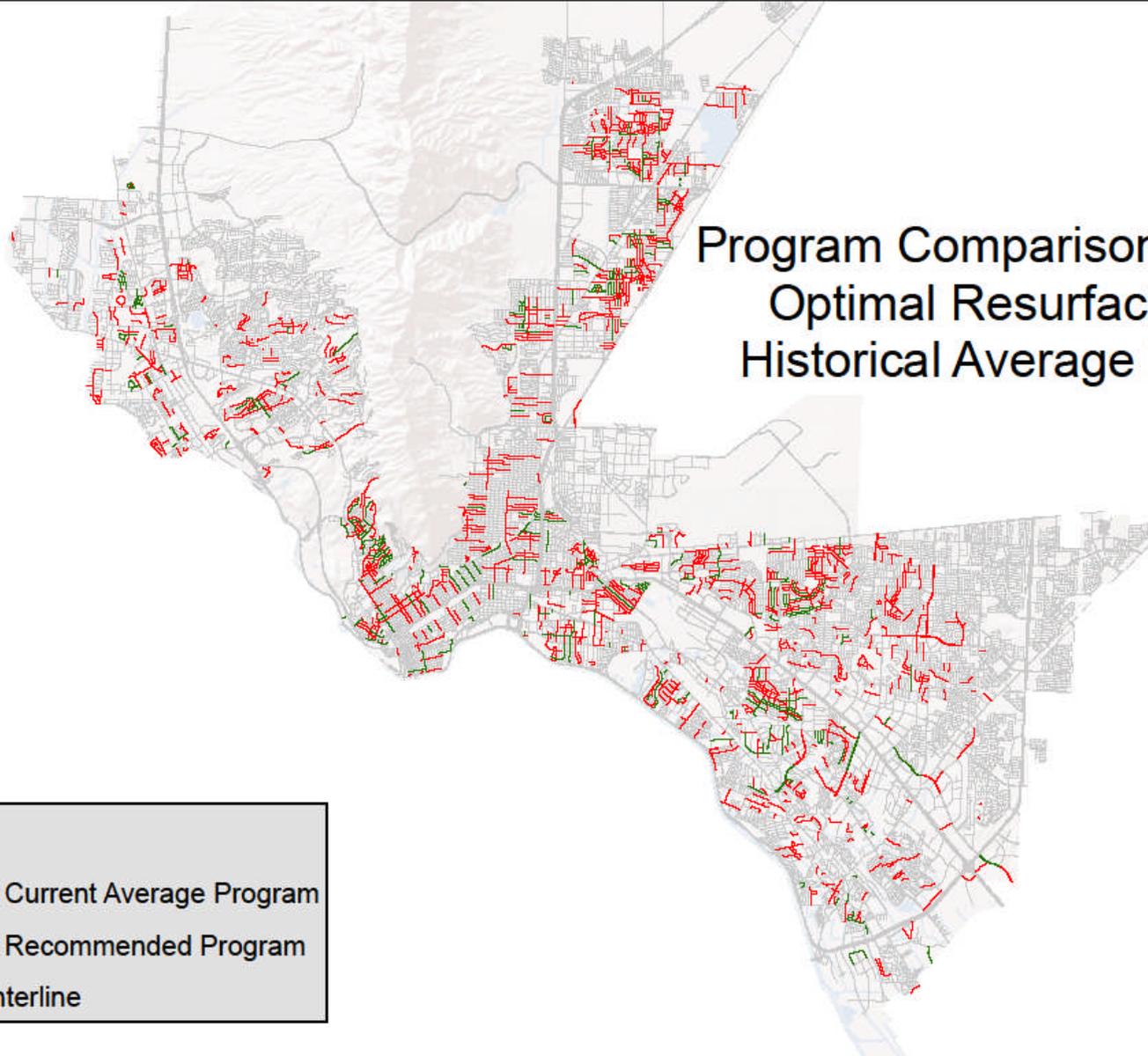


### Legend

-  5 Years of Current Average Program
-  Street Centerline



## Program Comparison Between Optimal Resurfacing and Historical Average Program



### Legend

-  5 Years of Current Average Program
-  5 Years of Recommended Program
-  Street Centerline

S E R V I C E   S O L U T I O N S   S U C C E S S



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