

# **City of Milwaukee Department of Public Works**

**Federal/State aid, Major Freeway,  
Local Street, Alley  
and Traffic Calming Programs**





# OVERVIEW



# STREET INVENTORY (MILES)

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## City Maintained:

Local Streets: 908.9 (71.5%)

Collectors: 77.6 (6%)

Minor Arterials: 223.2 (17.5%)

Major Arterials: 62.5 (5%)

**Subtotal: 1272.2**

## Others:

County Trunk Highways: 32.4

State Maintained Highways: 40.6

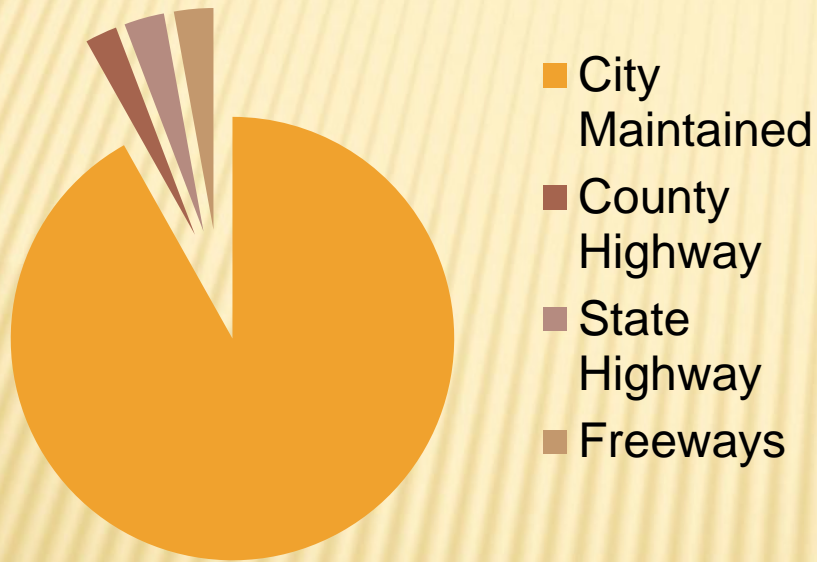
Freeways: 39.7

**Total: 1384.9**

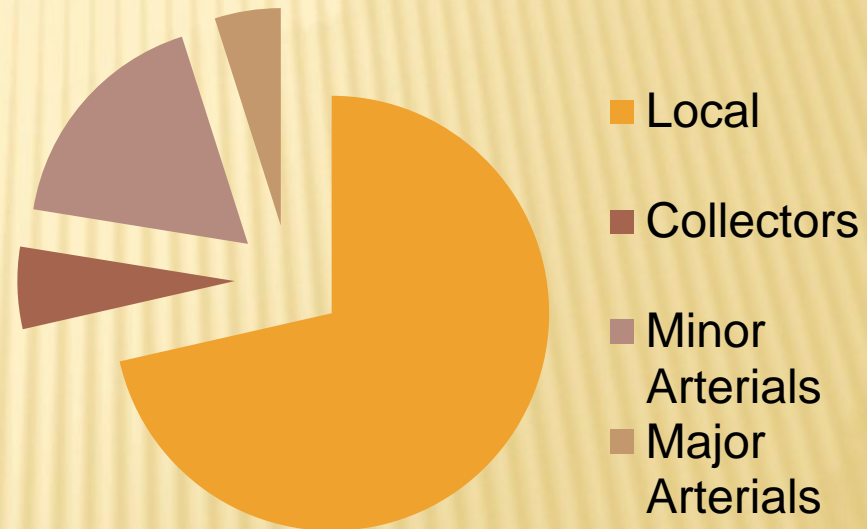


# STREET INVENTORY

## All Streets



## City Maintained



# PAVEMENT CONDITION RATINGS

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Every seven years DPW obtains a condition rating for every street segment in the City under the PMS (Pavement Management System) and rates them on various pavement distresses such as:

- Severity of cracking

- Potholes

- Joint failure

- Rutting

# PAVEMENT RATINGS

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A PQI (Pavement Quality Index) is identified from the distresses on a scale of 20 to 100 for the Pavement Management System

100 is the best, brand new street

70 to 90 is Good

45 to 70 is Fair

20 to 45 is Poor



# STANTEC CONSULTANT

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- ✘ Last survey done in 2006-2007
  - + 2006 ~ north half of the city
  - + 2007 ~ south half
  - + Total Cost ~ \$160,000
- ✘ **2013 the entire system will be surveyed and re-evaluated by a consultant. \$200,000 is budgeted in the Major Street Program for this work.**

# PAVEMENT CONDITION BY CLASSIFICATION (MILES) 2011 DATA

## THIS WILL BE UPDATED IN 2013 WITH THE NEW SCALE

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	Good	Fair	Poor
	PQI >70	70 < >45	<45
Major Arterial	44	11	7
Minor Arterial	123	64	37
Collector Streets	40	28	10
Local Streets	388	400	122
Total	595	503	176



# PROGRAMS - PUBLISHED

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- × Preliminary and Final program
  - + includes all projects anticipated to be constructed
- × Major Street program – 6 year
- × Local Street program – 6 year

For each program, the first three years are based on anticipated budgets.

# STATE AND FEDERAL AID PROGRAM





# STATE AND FEDERAL AID PROGRAM

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- ✘ Design and Construction Management for major and minor arterial streets
- ✘ Design and Construction Management for project bid by Wisconsin Department of Transportation (WISDOT)
  - + HSIP - Highway Safety Improvement Program
  - + SRTS - Safe Routes to Schools
  - + TE - Transportation Enhancement
  - + ARRA - American Recovery and Reinvestment Act
  - + MSIP - Municipal Streets Improvement Program
  - + CMAQ - Congestion Mitigation Air Quality Program
- ✘ Coordinates with adjacent communities on arterial paving projects crossing municipal boundaries
- ✘ Represents City Interests on Milwaukee County Highway Paving and Bridge projects
- ✘ Coordinates Bridge Projects
- ✘ Coordinates with WISDOT on State Trunk Highway Projects

# MAJOR FREEWAY PROJECTS

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## Coordination for:

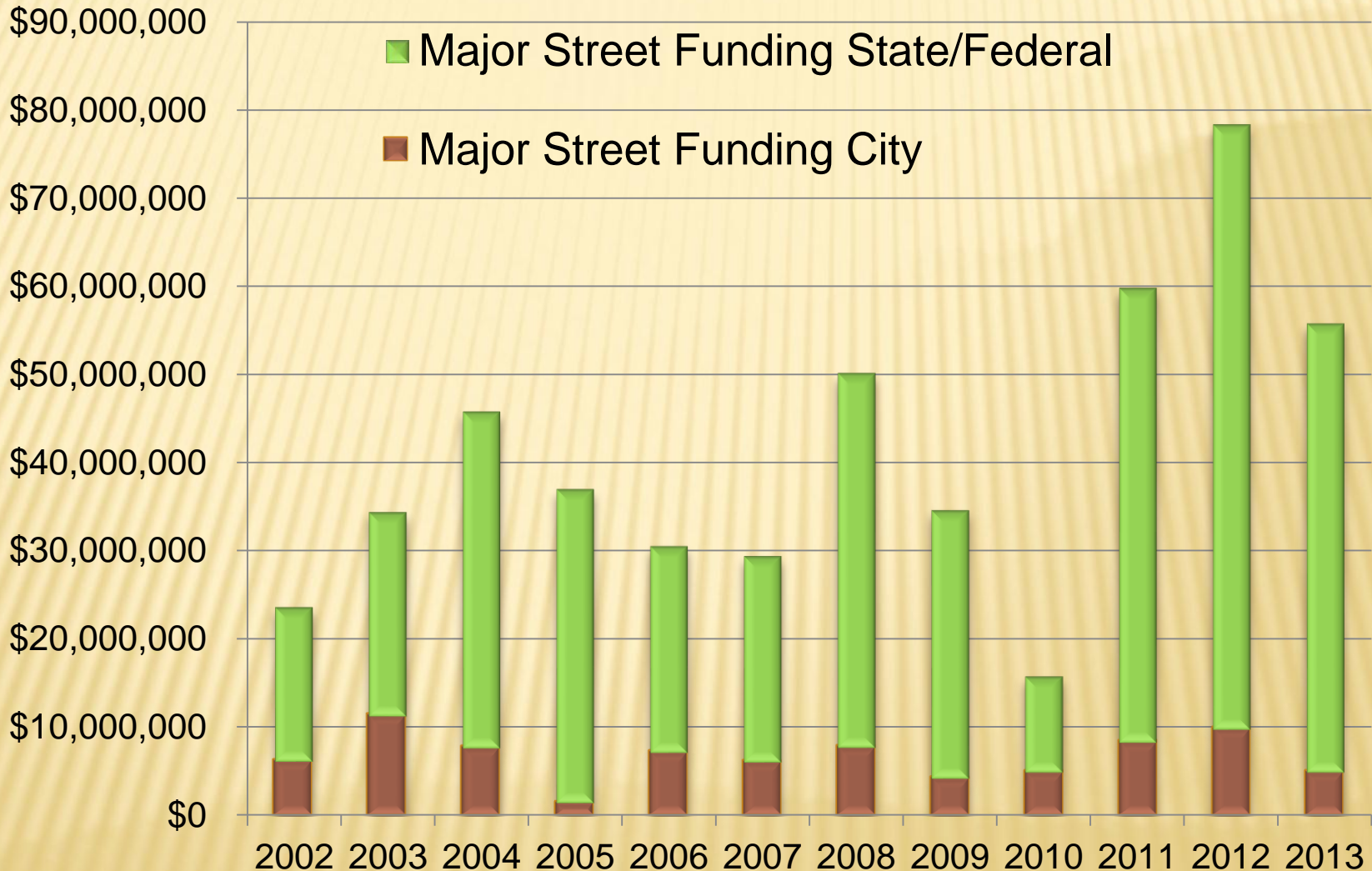
- North-South Mitchell Interchange
- Hoan Bridge
- I-43 North-South Freeway  
Mitchell to Marquette Interchange
- I-94 East- West Freeway  
70<sup>th</sup> to 25<sup>th</sup> Streets
- Hwy 41- Stadium to W. Lisbon Av.
- Zoo Interchange



# FACTORS AFFECTING TIMING OF PROJECTS

- ✘ Right of way acquisition
- ✘ Historical/Archeological review
- ✘ Railroad coordination
- ✘ Utilities
- ✘ Hollow walks
- ✘ Trans 75 impacts – for bikes and pedestrians
- ✘ Environmental
- ✘ Changes to State and Federal requirements

# 2002- 2013 MAJOR STREET FUNDING

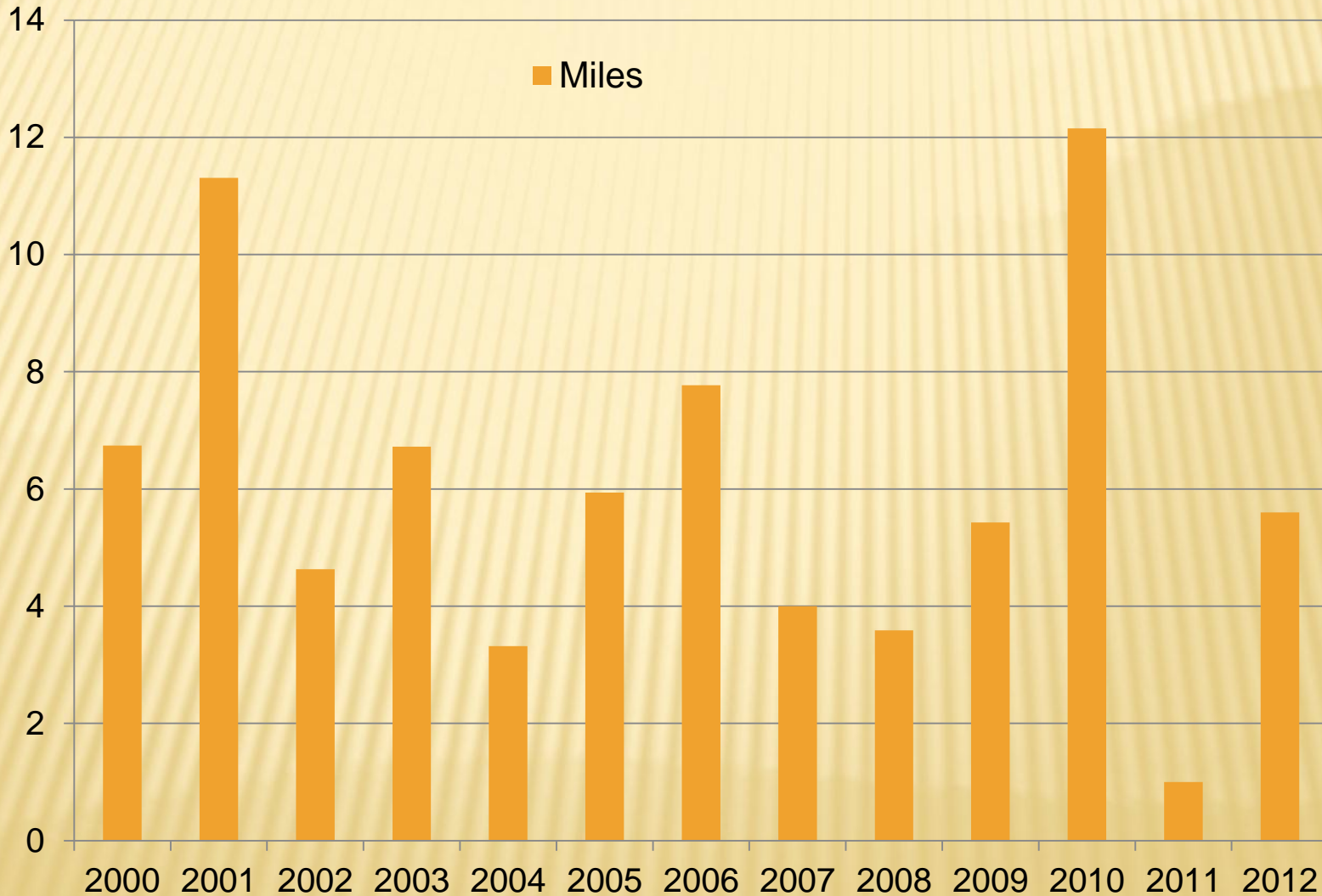




# STP - STATE TRANSPORTATION PROGRAM - WISDOT FUNDING TO THE CITY FOR PAVING OF LOCAL STREETS

	<b>Funding Year</b>	<b>STP Funds</b>
×	2004-2005	\$12,042,850
×	2006-2007	\$11,687,730
×	2008-2009	\$10,965,750
×	2010-2012	\$12,309,509
×	2013-2014	\$11,796,858

# MILES OF MAJOR STREETS CONSTRUCTED





# 2013 SERVICE LIFE ESTIMATE

## Existing pavements of Minor Arterial streets :

<b>Type:</b>	<b>Miles</b>	<b>% of total</b>	<b>Estimated life (years)</b>	<b>Replacement rate (miles/yr)*</b>	<b>Replacement pavement</b>	<b>Cost per mile</b>	<b>Amount needed per year</b>
<b>Composite and Flexible</b>	59.9	26%	30	2	Reconstruct (45%)	\$2,200,000	\$4,392,700
<b>Composite and Flexible</b>	73.3	34%	30	2.44	Asphalt (55%)	\$1,600,000	\$3,909,400
<b>Rigid (concrete)</b>	89.8	40%	55	1.63	Asphalt	\$1,600,000	\$2,612,400
<b>Totals</b>	223.2	100%		6.07			\$10,900,000

\* = number of miles/ estimated life

**Minor Arterial Rehabilitation cycle 36.75 years**

# EXISTING PAVEMENTS OF PRINCIPAL ARTERIAL STREETS :

Type:	Miles	% of total	Estimated life (years)	Replacement rate (miles/yr)*	Replacement pavement	Cost per mile	Amount needed per year
Composite and Flexible	17.6	35%	30	0.59	Concrete (45%)	\$2,700,000	\$ 1,585,000
Composite and Flexible	21.6	28%	30	0.72	Asphalt (55%)	\$2,000,000	\$ 1,440,000
Rigid (concrete)	23.3	37%	55	0.42	Asphalt	\$2,000,000	\$ 850,000
<b>Totals</b>	<b>62.5</b>	<b>100%</b>		<b>1.73</b>			<b>\$ 3,875,000</b>

**Principal Arterial Replacement Cycle 36.12 years**

\* = number of miles/ estimated life

Total Minor and Principal Arterials \$ 14,775,000  
 Rounded \$ 15,000,000  
 Advanced planning \$ 800,000

**Total Need Minor and Principal Arterials \$ 15,800,000**



# NORTH 20<sup>TH</sup> ST. - W. HOPKINS ST. TO W. CAPITOL DR. CONNECTING HIGHWAY PROJECT FUNDED BY STATE TRUNK HIGHWAY PROGRAM





# WEST CAPITOL DRIVE – N. 60<sup>TH</sup> ST. TO N. 84<sup>TH</sup> ST. CONNECTING HIGHWAY PROJECT FUNDED BY STATE TRUNK HIGHWAY PROGRAM





# N. 91<sup>ST</sup> ST./N. SWAN RD. – W. HAMPTON AV. TO W. FLAGG AV. FUNDED BY STATE TRANSPORTATION FUND (STP)



**N. PORT WASHINGTON AV. –**

**N. DR. MARTIN LUTHER KING JR. DR. TO NORTH CITY LIMITS**

**FUNDED BY STATE TRANSPORTATION FUND (STP)**





# W. MORGAN AV. – S. 68<sup>TH</sup> ST. TO S. 84<sup>TH</sup> ST. FUNDED BY STATE TRANSPORTATION FUND (STP)



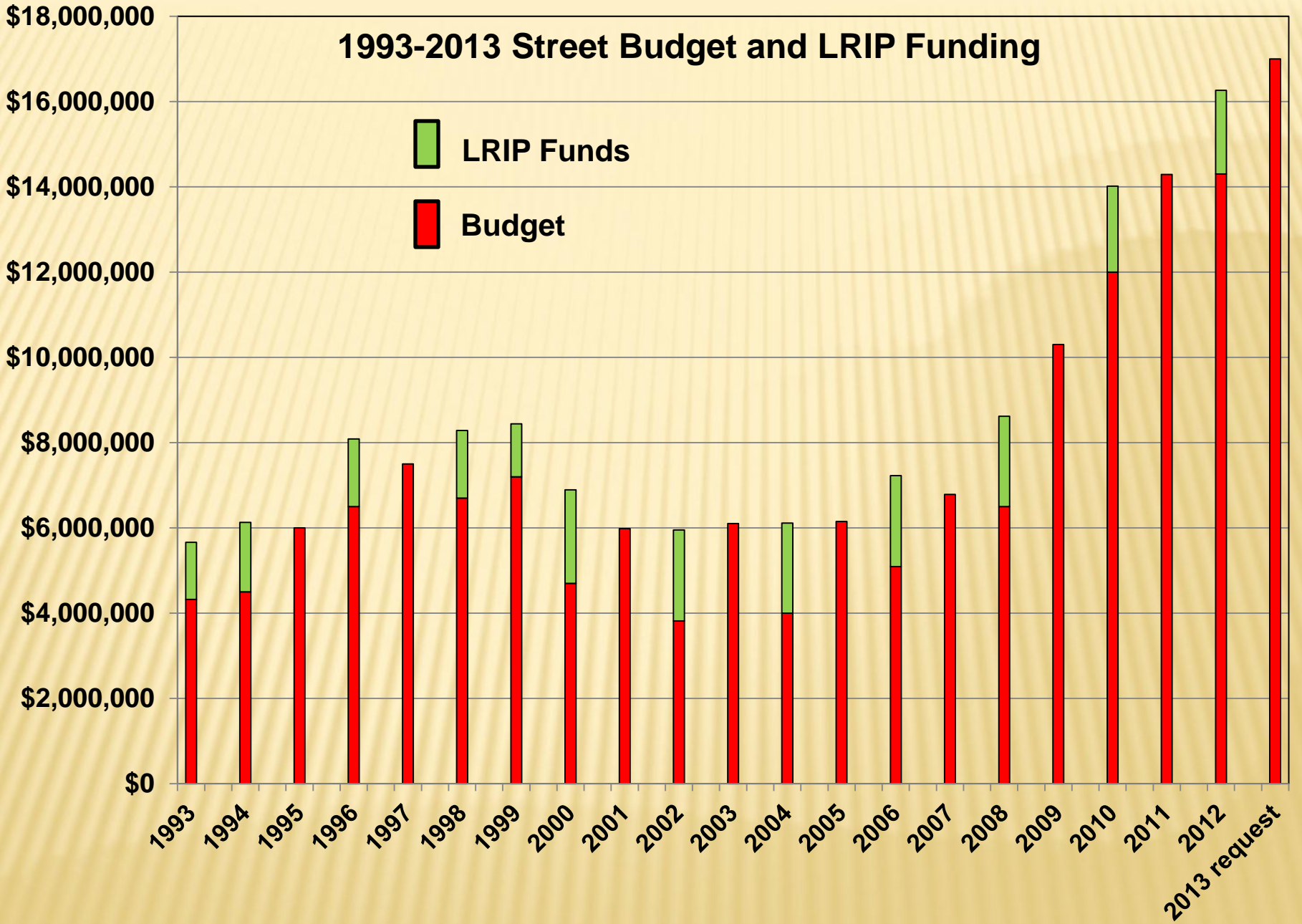


# LOCAL STREET PROGRAM





# 1993-2013 Street Budget and LRIP Funding



# LOCAL STREET PROJECT APPROVAL RATE

Year	Streets	% Approved
2012	90/90	100
2011	65/67	97.0 ~ 2 speed humps deleted
2010	50/59	85.0 ~ 9 speed humps deleted
2009	62/64	96.8
2008	47/60	78.3 ~ VRF* approved in mid 2008
2007	34/46	73.9
2006	34/43	79.1
2005	40/61	65.6
2004	34/40	85.0
2003	39/53	73.6
2002	33/52	63.5
2001	31/38	81.6
2000	53/56	94.6

\* Vehicle Registration Fee, replaced assessment for pavement



# MILES CONSTRUCTED

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Year	Mile
2007	4.2
2008	9.7
2009	9.5
2010	19.5
2011	15.9
2012	19.3*
2013	17 (estimated)

\* Note 4.5 miles to be constructed in 2013



# STREET PROJECT PRIOR TO ASPHALT PLACEMENT





# Local Streets: Existing pavements

<b>Type:</b>	<b>Miles</b>	<b>% of total</b>	<b>Replacement</b>		<b>Replacement pavement</b>	<b>Cost per mile</b>	<b>Amount needed per year</b>
			<b>Estimated life (years)</b>	<b>rate (miles/yr)*</b>			
<b>Composite (asphalt over concrete)</b>	<b>65</b>	<b>13%</b>	<b>56</b>	<b>1.16</b>	<b>Reconstruct (45%)</b>	<b>\$ 1,450,000</b>	<b>\$ 1,677,857</b>
<b>Composite (asphalt over concrete)</b>	<b>79</b>	<b>15%</b>	<b>50</b>	<b>1.58</b>	<b>Asphalt (55%)</b>	<b>\$ 725,000</b>	<b>\$ 1,148,400</b>
<b>Flexible (asphalt)</b>	<b>252</b>	<b>16%</b>	<b>61</b>	<b>4.13</b>	<b>Asphalt</b>	<b>\$ 725,000</b>	<b>\$ 2,995,082</b>
<b>Macadam</b>	<b>82</b>	<b>9%</b>	<b>85</b>	<b>0.96</b>	<b>Asphalt</b>	<b>\$ 750,000</b>	<b>\$ 721,853</b>
<b>Rigid (concrete)</b>	<b>427</b>	<b>47%</b>	<b>47</b>	<b>9.09</b>	<b>Asphalt</b>	<b>\$ 700,000</b>	<b>\$ 6,363,000</b>
<b>Totals</b>	<b>909</b>	<b>100%</b>		<b>16.92</b>			<b>\$ 12,906,192</b>

**Rehabilitation Cycle 53.7 years**

*\* = number of miles/assumed life*

## **Collector Streets: Existing pavements**

<b>Type:</b>	<b>Miles</b>	<b>% of total</b>	<b>Estimated life (years)</b>	<b>Replacement rate (miles/yr)*</b>	<b>Replacement pavement</b>	<b>Cost per mile</b>	<b>Amount needed per year</b>
<b>Composite (asphalt over concrete)</b>	<b>8</b>	<b>18%</b>	<b>42</b>	<b>0.2</b>	<b>Concrete (50%)</b>	<b>\$ 1,450,000</b>	<b>\$ 284,821</b>
<b>Composite (asphalt over concrete)</b>	<b>8</b>	<b>18%</b>	<b>42</b>	<b>0.2</b>	<b>Asphalt (50%)</b>	<b>\$ 725,000</b>	<b>\$ 142,411</b>
<b>Flexible (asphalt)</b>	<b>28</b>	<b>22%</b>	<b>47</b>	<b>0.60</b>	<b>Concrete</b>	<b>\$ 1,450,000</b>	<b>\$ 863,830</b>
<b>Macadam</b>	<b>4</b>	<b>5%</b>	<b>80</b>	<b>0.05</b>	<b>Asphalt</b>	<b>\$ 750,000</b>	<b>\$ 36,563</b>
<b>Rigid (concrete)</b>	<b>29</b>	<b>37%</b>	<b>45</b>	<b>0.64</b>	<b>Asphalt</b>	<b>\$ 700,000</b>	<b>\$ 448,933</b>
<b>Totals</b>	<b>78</b>	<b>100%</b>		<b>1.68</b>			<b>\$ 1,776,558</b>

**Rehabilitation cycle**

**46.5 years**

**\* = number of miles/assumed life**



# Service Life -- 2013

<b>Total Locals and Collectors</b>	<b>\$</b>	<b>14,682,750</b>
<b>Rounded</b>	<b>\$</b>	<b>14,700,000</b>
<b>Advanced planning</b>	<b>\$</b>	<b>1,000,000</b>
<b>Maintenance</b>	<b>\$</b>	<b>1,300,000</b>
<hr/>		
<b>Total request</b>	<b>\$</b>	<b>17,000,000</b>
<hr/>		
<b>LRIP funds</b>	<b>\$</b>	<b>0</b>
<b>Total Capital request</b>	<b>\$</b>	<b>17,000,000</b>
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Based on current funding  
with rehabilitation of about 17 miles per year:

We can anticipate a rehabilitation cycle of about 55 years

# REPLACEMENT CYCLE VARIOUS CITIES

City	Replacement Cycle – Years
Fitchburg	25 - asphalt only
Stoughton	20 - asphalt 45 - concrete
<b>Milwaukee</b>	<b>50-60</b>
Green Bay	50-60
Janesville	55
Hartland	60
West Allis	70
Fox Point	90
La Crosse	100 +
<b>Other Cities</b>	
Minneapolis	50
Seattle WA	75
Portland OR	200



## ALLEY IN NEED OF REPAIR



## NEW ALLEY



ALLEYS



There are  
4,028  
paved  
alleys with  
a length of  
414 miles

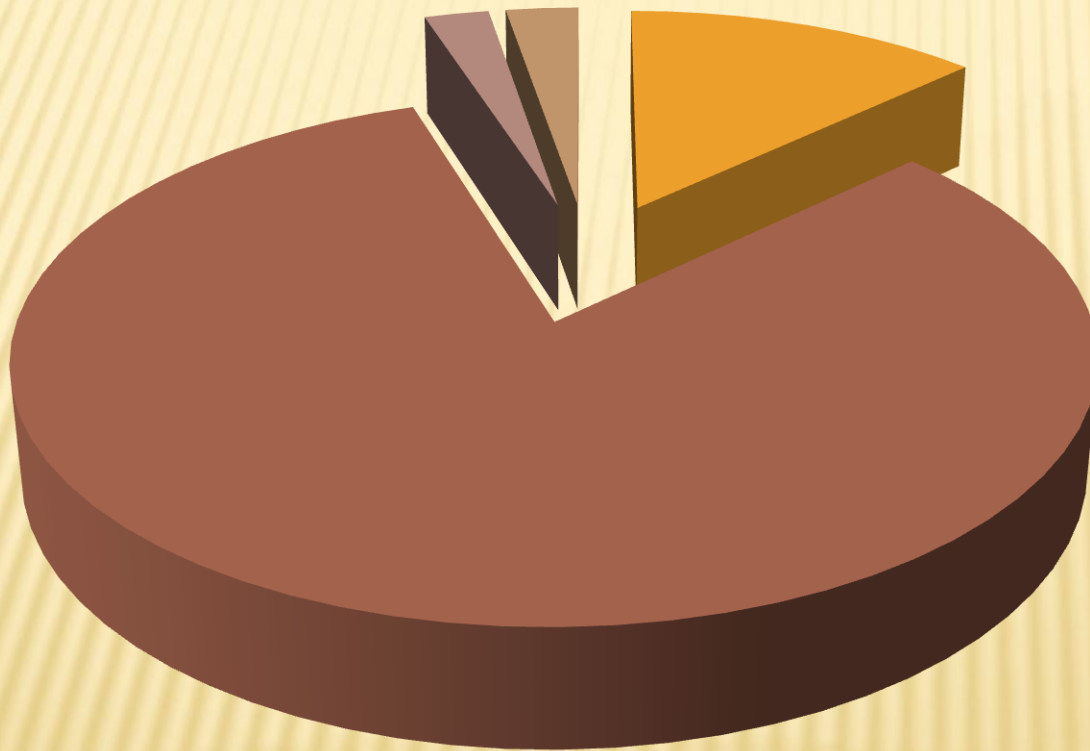


**ALLEY INVENTORY**



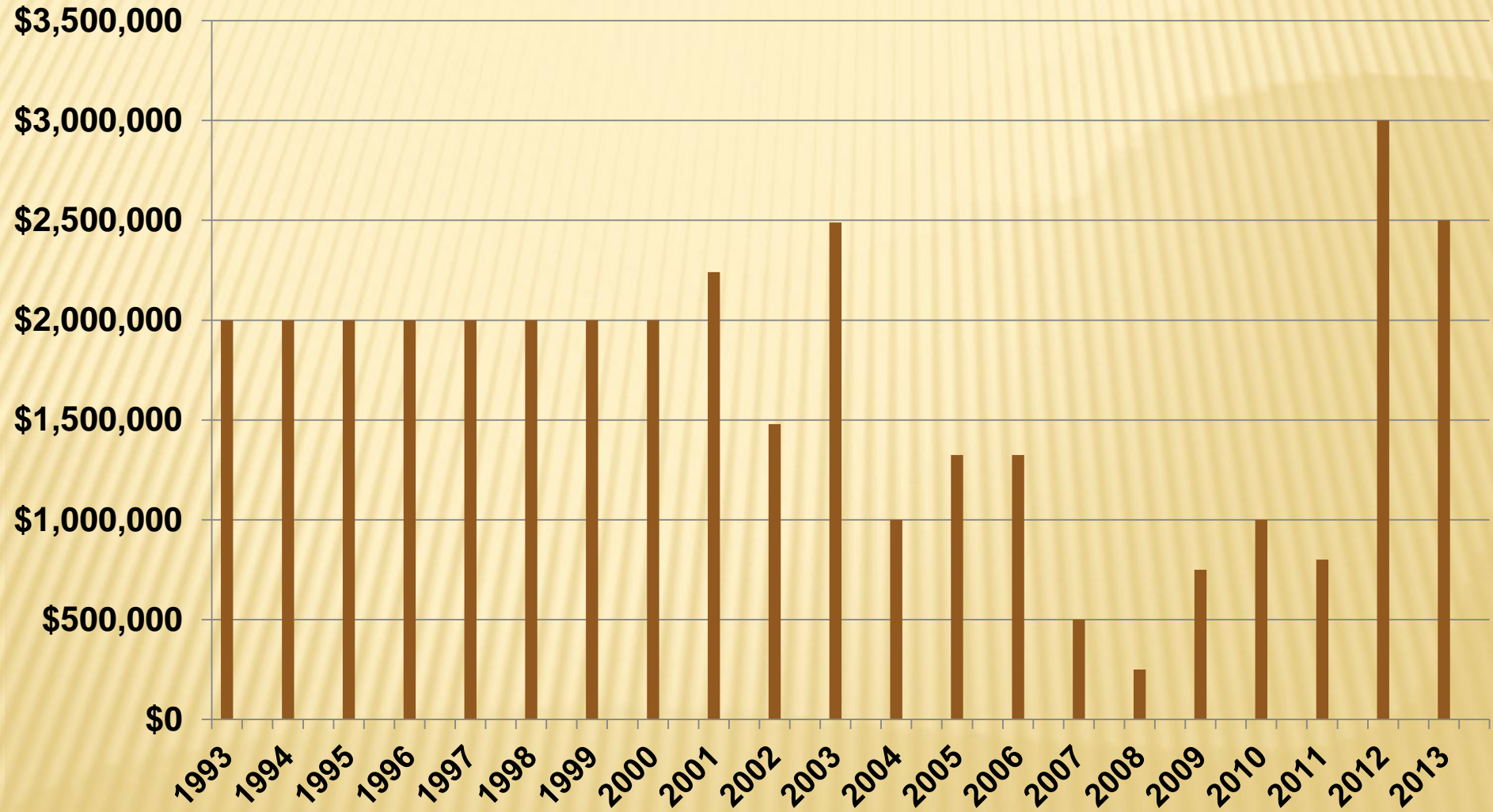
# ALLEY PAVEMENT TYPES

## Surface



- Asphalt
- Concrete
- Brick/Block
- Other

# FUNDING FOR ALLEYS 1993-2013



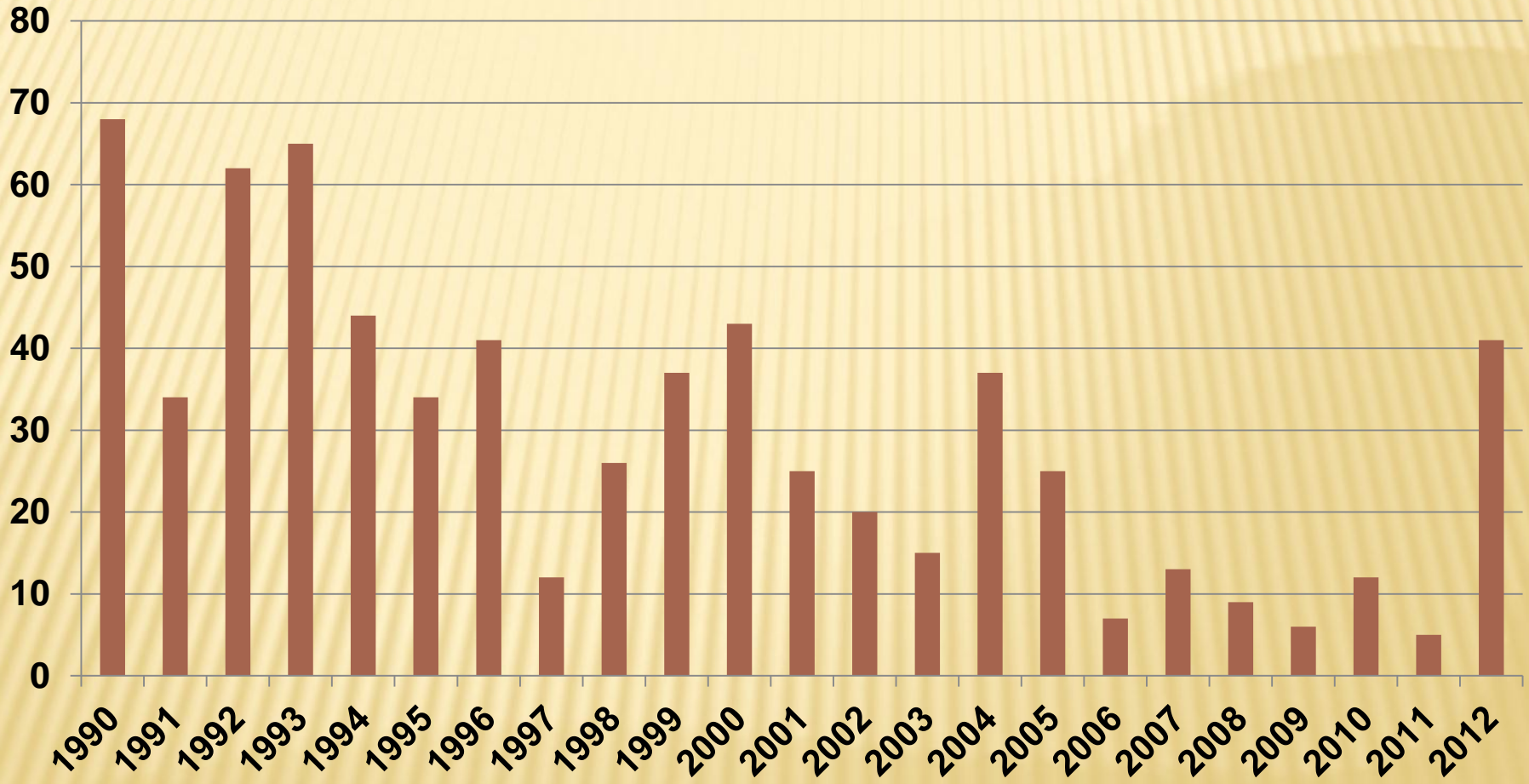


# ALLEYS

<b>Year</b>	<b>Scheduled</b>	<b>Approved</b>	<b>% Approved</b>
<b>2012</b>	<b>38</b>	<b>34</b>	<b>89.5%</b>
<b>2011</b>	<b>8</b>	<b>8</b>	<b>100.0%</b>
<b>2010</b>	<b>10</b>	<b>7</b>	<b>70.0%</b>
<b>2009</b>	<b>7</b>	<b>6</b>	<b>85.7%</b>
<b>2008</b>	<b>10</b>	<b>7</b>	<b>70.0%</b>
<b>2007</b>	<b>9</b>	<b>4</b>	<b>44.4%</b>
<b>2006</b>	<b>11</b>	<b>7</b>	<b>63.6%</b>
<b>2005</b>	<b>52</b>	<b>26</b>	<b>50.0%</b>
<b>2004</b>	<b>34</b>	<b>20</b>	<b>58.8%</b>
<b>2003</b>	<b>34</b>	<b>20</b>	<b>58.8%</b>
<b>2002</b>	<b>29</b>	<b>19</b>	<b>65.5%</b>
<b>2001</b>	<b>20</b>	<b>17</b>	<b>85.0%</b>
<b>2000</b>	<b>42</b>	<b>39</b>	<b>92.9%</b>

# ALLEYS CONSTRUCTED

# 1990-2012





# ALLEY REPLACEMENT RATE

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- ❖ The 2013 rate of \$19/foot for a 20 foot wide alley
  - recovers 30% of the adjacent work
  - 20% of the total cost due to non assessable items
- ❖ The lower assessment rate
  - Increases alley project approvals
- ❖ The extra \$2.0 M in 2012
  - Constructed 32 alleys that were previously deleted

# TRAFFIC CIRCLE



# SPEED HUMP



# TRAFFIC CALMING





# Neighborhood Traffic Management Program

- Education
- Enforcement
- Encouragement
- Engineering



# SPEED HUMP IN CONJUNCTION WITH PAVING





# TRAFFIC CIRCLE N. 29<sup>TH</sup> ST. AND W. COURTLAND AV.





TRAFFIC CIRCLE

N. 56<sup>TH</sup> ST. AND W. MELVINA ST.





# TRAFFIC CALMING ORDINANCE

- ❖ Enacted in 2007 by Resolution 060841
- ❖ Speed Humps constructed:
  - 2007 - 3 locations
  - 2008 - 7 locations
  - 2009 -11 locations
  - 2010 -10 locations
  - 2011 - 9 locations
  - 2012 - 9 locations and 3 traffic circles

# TRAFFIC CALMING ASSESSMENTS

- ✘ The 2013 rate is \$5.30 per frontage foot
- ✘ Generally the local Alderman requests a survey of the property owners
- ✘ For 2013:
  - + many locations have been requested by the local alderman
  - + we are in the process of surveying the owners



# QUESTIONS?

