

# Pavement Management Program

## 2015

*Street Maintenance & Capital Improvement Program*



City of Lawrence  
PUBLIC WORKS

## *Executive Summary*

February 24, 2015

Presented by

Mark Thiel / David Cronin

# The TEAM

- Pavement Engineer
- Engineering Division
- Street Division
- Other City Departments
- Bicycle Advisory Committee
- Complete Streets Group
- Contractors
- Community
- *Others.....*

# PCI Goals

- Prevent / slow down further deterioration
- Establish a maintenance plan
- Critical points (from preventative to rehabilitation work)
  - Arterial 65
  - Collector 60
  - Residential 55
- Cycle 1 - 31.5% in “fair to poor” range
- Cycle 2 - 29.8% in “fair to poor” range
- Cycle 3 - 20.57% in “fair to poor” range
- Cycle 4 (Phase 1) w/ Cycle 3 - **19.49% in “fair to poor” range**
- “fair to poor” suggests not a good candidate for preventative maintenance – should consider rehabilitation / possible reconstruction in some cases

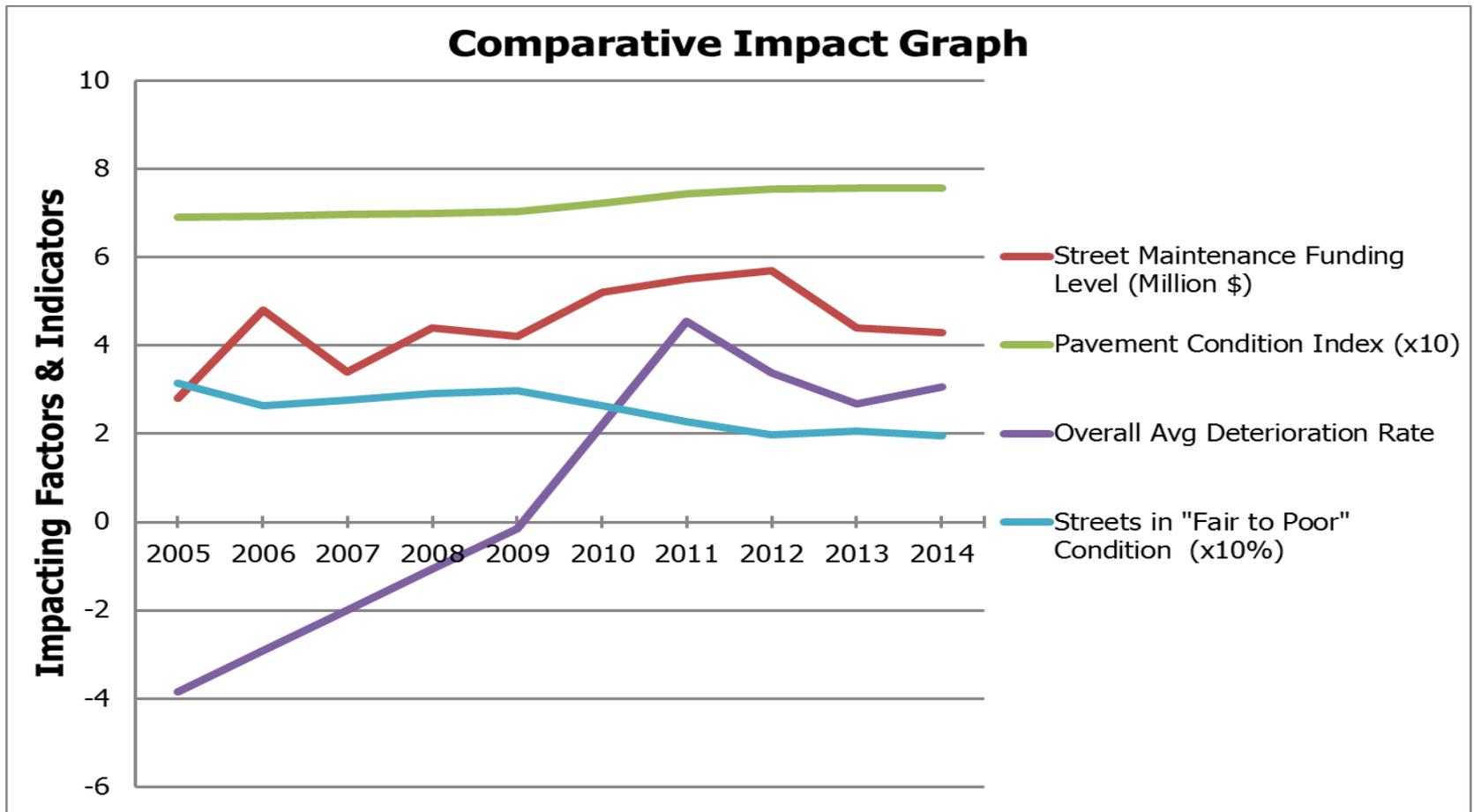
# Pothole Reduction

- Pothole numbers over the past several years have been generally reduced but continue to play a significant role in pavement maintenance
- 2014 showed an increase in potholes over 2013 and 2012
- Pavement Management Program success - balanced use of rehabilitation & preventative maintenance methods
- Continued use of patching methods (injection patching & mill/patch)
- Fewer freeze thaw cycles

# Pothole Comparison

<b>Potholes</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Potholes Reported on Phone & Hotline	468	210	183	303
Potholes Reported on Wufoo (on-line)	207	110	77	234
Total Reported	675	320	260	537
<b>Number of Holes Patched</b>	<b>12,575</b>	<b>6,041</b>	<b>6,127</b>	<b>9,875</b>
Tons of Hot Mix Used	664	449	400	3546
Tons of Cold Mix Used	164	87	80	189
Square Yards of Durapatch Used	251	293	90	126

# Comparative Impact Graph



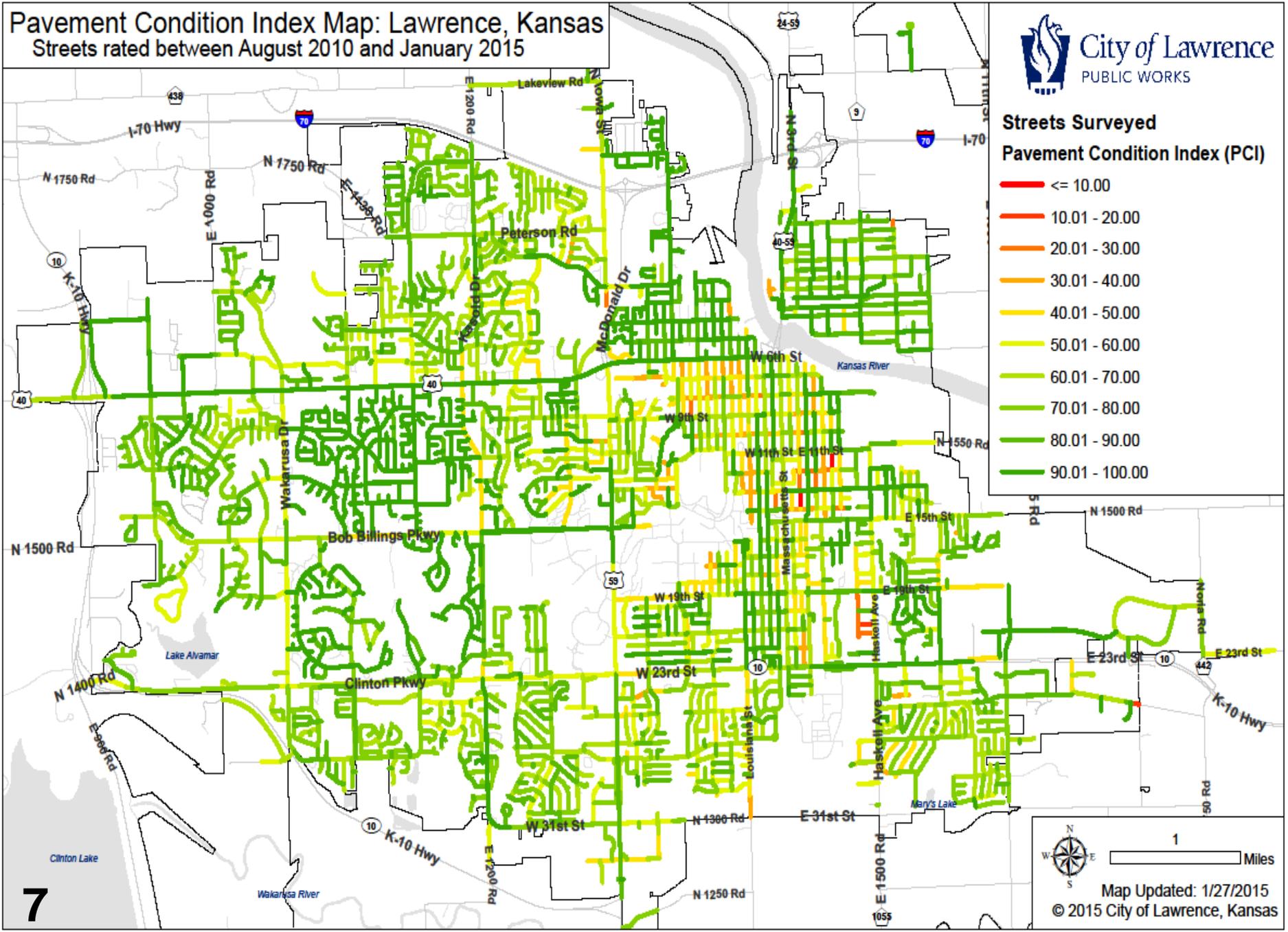
# Pavement Condition Index Map: Lawrence, Kansas

Streets rated between August 2010 and January 2015



## Streets Surveyed Pavement Condition Index (PCI)

- █ <= 10.00
- █ 10.01 - 20.00
- █ 20.01 - 30.00
- █ 30.01 - 40.00
- █ 40.01 - 50.00
- █ 50.01 - 60.00
- █ 60.01 - 70.00
- █ 70.01 - 80.00
- █ 80.01 - 90.00
- █ 90.01 - 100.00



# Maintenance Programs Contracted



# Maintenance Programs In-House



# Program Outreach & Public Education

## LIMITED ACCESS

Access to the street during the microsurfacing process (4-8 hours) will be limited to pedestrian traffic only. Cars must be removed from the street—or driveway if planning to leave later—by 8am. The street will be open to traffic once the microsurfacing has had sufficient time to cure (typically a few hours) so that vehicular traffic will not damage the fresh surface.



"Microsurfacing provides an effective treatment for preserving, protecting, and providing additional life to streets."

- Asphalt Materials, Inc.

## QUESTIONS?

City of Lawrence

City Hall  
8 East 6th St  
Lawrence, KS 66044

Public Works  
785-832-3123  
cityhall@lawrenceks.org



City of Lawrence  
PUBLIC WORKS

## Street Maintenance

Resident's Guide to Microsurfacing



City of Lawrence  
PUBLIC WORKS

# MAINTAINING OUR FUTURE



## A GUIDE TO STREET MAINTENANCE IN LAWRENCE, KANSAS



City of Lawrence  
PUBLIC WORKS

City of Lawrence  
6th E 6th Street  
Lawrence, Kansas

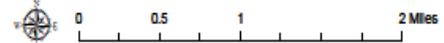
# 2014 Contract Maintenance Summary & Overall As-Built Map

<b>Work Type</b>	<b>Contracted Maintenance - 2014</b>
Mill & Overlay	11.95 Lane-Miles
Microsurfacing & Patching	29.74 Lane-Miles
Concrete Pavement & Rehab Patching	3,464 Square Yards
Curb & Gutter	15,622 Linear Feet
ADA Access Ramps	20 Ramps

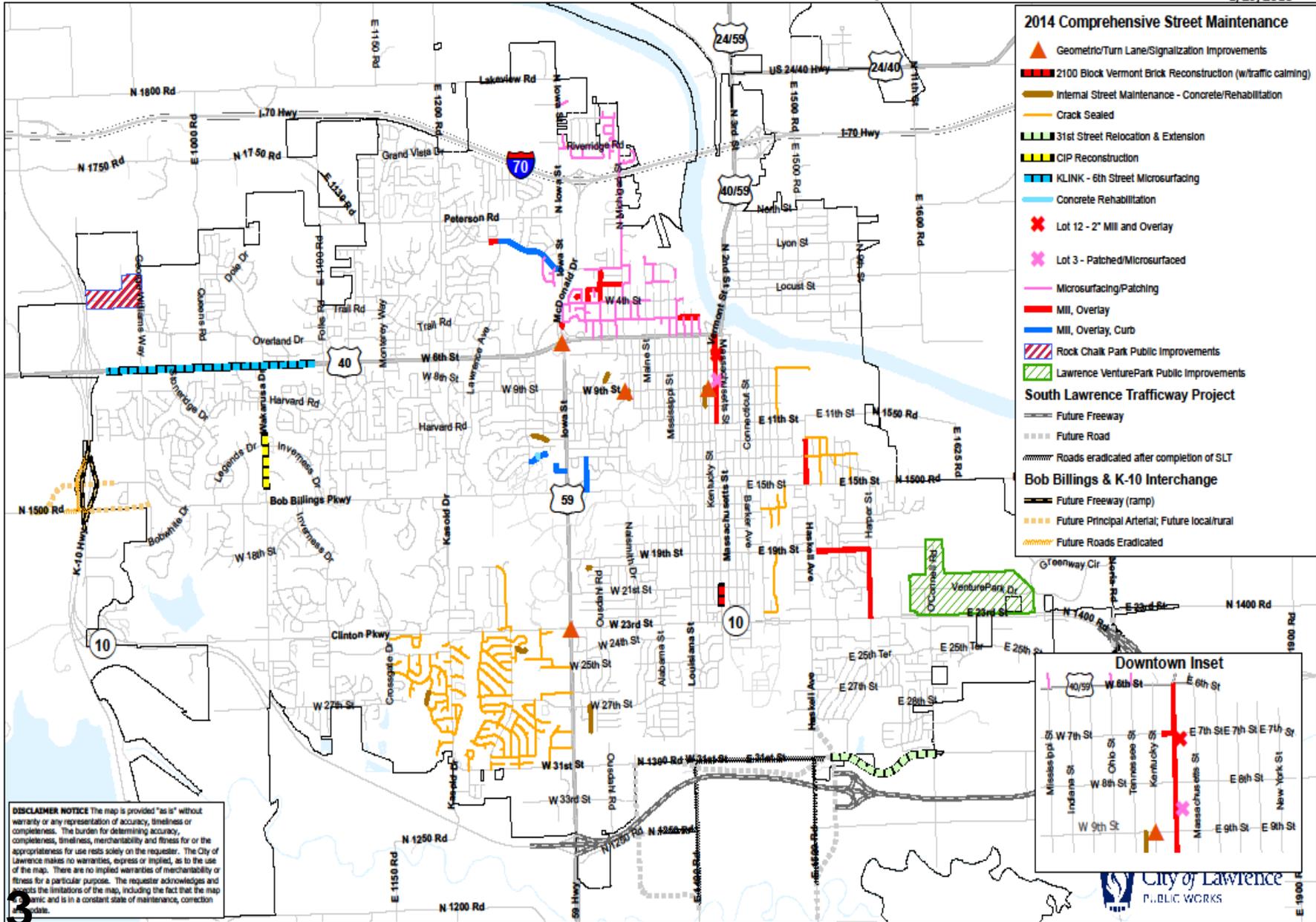
# 2014 Internal Maintenance Summary & Overall As-Built Map

Work Type	Internal Maintenance - 2014
Crack Sealing	67,643 Pounds
Pot-Hole Patching	3,735 Tons / 126 SY Durapatch
Concrete Patching	3,075 Square Yards
Curb & Gutter	4,904 Linear Feet
ADA Access Ramps	32 Ramps

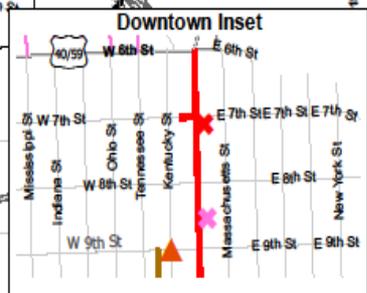
# 2014 Comprehensive Street Maintenance Program- As Built



Updated:  
1/29/2015

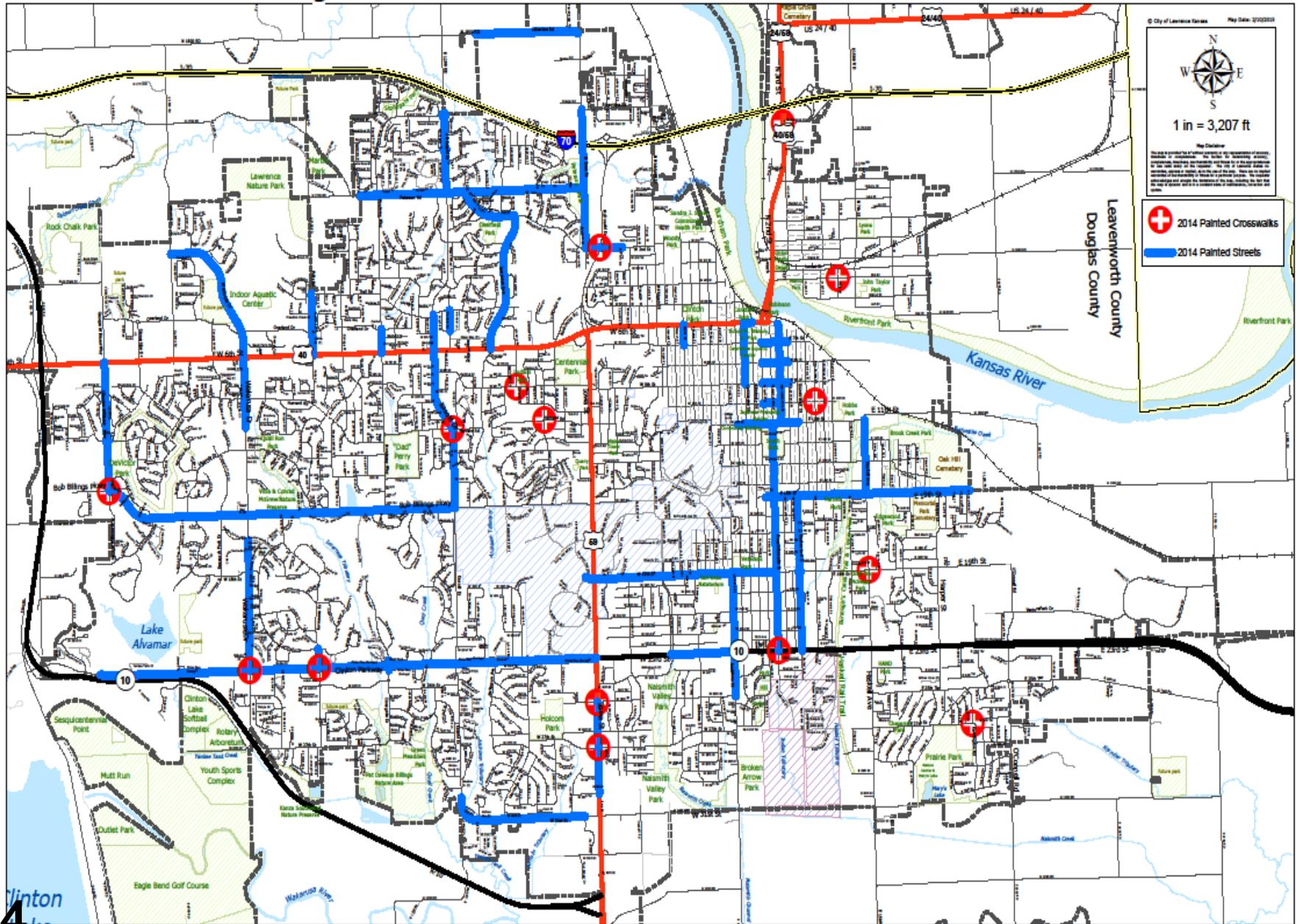


- ### 2014 Comprehensive Street Maintenance
- Geometric/Turn Lane/Signalization Improvements
  - 2100 Block Vermont Brick Reconstruction (w/traffic calming)
  - Internal Street Maintenance - Concrete/Rehabilitation
  - Crack Sealed
  - 31st Street Relocation & Extension
  - CIP Reconstruction
  - KLINK - 6th Street Microsurfacing
  - Concrete Rehabilitation
  - Lot 12 - 2" Mill and Overlay
  - Lot 3 - Patched/Microsurfaced
  - Microsurfacing/Patching
  - Mill, Overlay
  - Mill, Overlay, Curb
  - Rock Chalk Park Public Improvements
  - Lawrence VenturePark Public Improvements
- ### South Lawrence Trafficway Project
- Future Freeway
  - Future Road
  - Roads eradicated after completion of SLT
- ### Bob Billings & K-10 Interchange
- Future Freeway (ramp)
  - Future Principal Arterial; Future local/rural
  - Future Roads Eradicated



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# 2014 Pavement Marking and Crosswalks - As Built



# Pedestrian & Bicycle Facility Improvements

Year	New Sidewalk		Repaired Sidewalk		New Ramps		Repaired Ramps		Total
	<i>LF</i>	\$	<i>LF</i>	\$	#	\$	#	\$	\$
<b>2011</b>	15955	315,000	881	17,154	0	0	31	21,825	\$ <b>353,979</b>
<b>2012</b>	745	170,195	812	18,781	12	20,000	46	34,925	\$ <b>243,900</b>
<b>2013</b>	1436	37,425	1469	25,158	11	11,000	40	38,650	\$ <b>112,233</b>
<b>2014</b>	14200	219,182	8254	168,026	25	28,200	87	86,145	\$ <b>501,553</b>
<b>2015</b>	7407	121,400	540	13,500	51	51,000	0	0	\$ <b>185,900</b>
<b>TOTAL</b>	<b>39743</b>	<b>\$863,201.83</b>	<b>\$11,955.75</b>	<b>\$242,618.48</b>	<b>99</b>	<b>\$110,200.00</b>	<b>204</b>	<b>\$181,545.00</b>	<b>\$1,397,565</b>

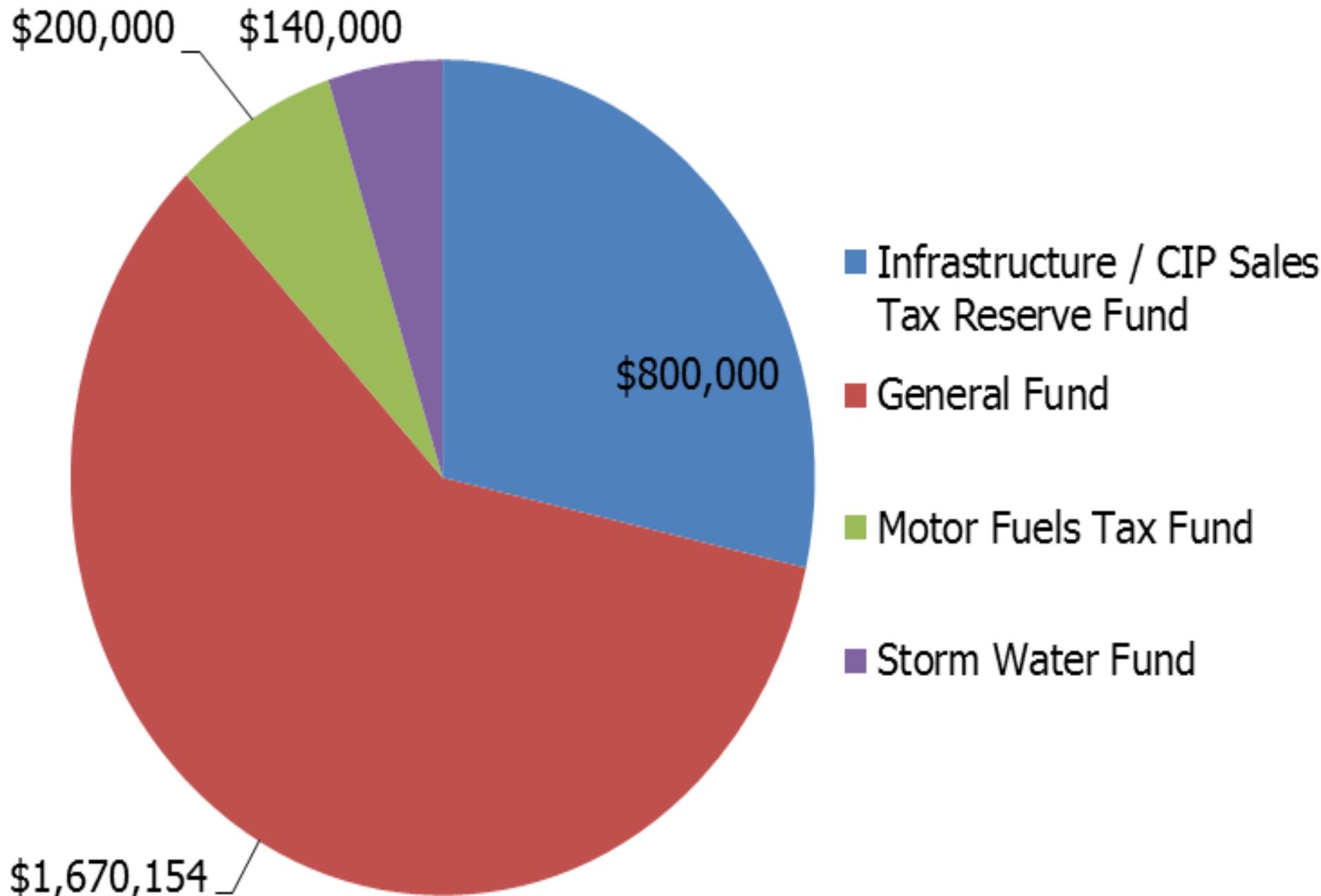
YEAR	BIKE LANES		SHARED USE PATH		TOTAL
	<i>LFT</i>	\$	<i>LFT</i>	\$	\$
<b>2011</b>	-	-	2600	80,000	80,000
<b>2012</b>	-	-	-	-	-
<b>2013</b>	21,566	142,500	5740	176,200	318,700
<b>2014</b>	21,301	560,500	9750	650,000	1,210,500
<b>2015</b>	7120	610,000	25,443	873,400	1,483,400
<b>TOTAL</b>	<b>49,987</b>	<b>\$1,313,000</b>	<b>43,533</b>	<b>\$1,779,600</b>	<b>\$ 3,092,600</b>
<b>(Miles)</b>	<b>(9.5)</b>		<b>(8.3)</b>		

# Summary of Program Update

- Average PCI progressive increase of 9.54% from Cycle 1 thru Cycle 4. However, from Cycle 3 thru Cycle 4 so far, there has been no significant change in the overall PCI. This indicates the program's progress is slowing.
- Deterioration rates overall are positive. However, some categories have begun a reversed trend downward.
- The overall percentage of “fair to poor” streets has continued to decline but the overall change has begun to level out.

# 2015 Program – Budget / Projects

- In August 2014 the Commission approved \$2.81 Million
- Verified by Budget Manager
- Projects selected using
  - Pavement management database (PCI's)
  - Constituent concerns
  - Known problem areas
  - Coordination with other projects / agencies
    - Utilities, development, new construction (coordination / phasing with other projects)
    - Bicycle advisory committee review of plan (based on BAC recommendations - planned inclusion of shared use paths, bicycle lanes, sharrows, & other amenities in various projects)
    - Incorporation of Complete Street Elements (ADA access ramps, crosswalks, bicycle lanes)
  - Selection of diverse locations throughout the City



# Complete Street Elements

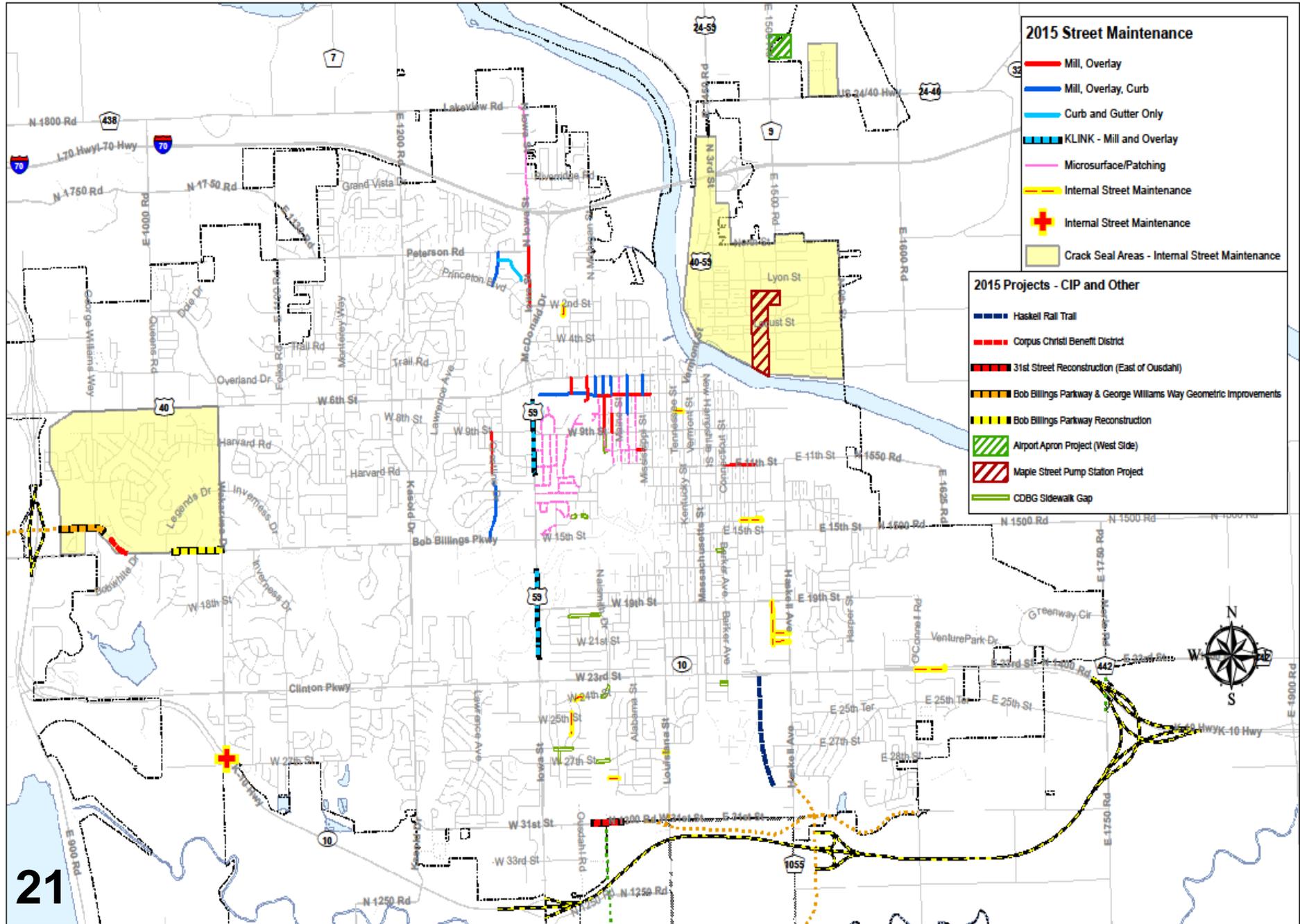
- Bicycle / Sidewalk Facilities

- Haskell Rail Trail – Pave existing gravel trail
- Bob Billings Pkwy, Wakarusa Dr to Foxfire Dr – Bike Lanes
- Bob Billings Pkwy and George Williams Way – Add Turn Lanes & Signalize Intersection
- Microsurfacing & Overlay Projects (various locations) – Reestablish Pre-existing Markings & Add Sharrows/ Bike Lanes where feasible
- CDBG sidewalk program - Various locations
- ADA Access Ramps – Remove/replace & new installation with various reconstruction and maintenance projects

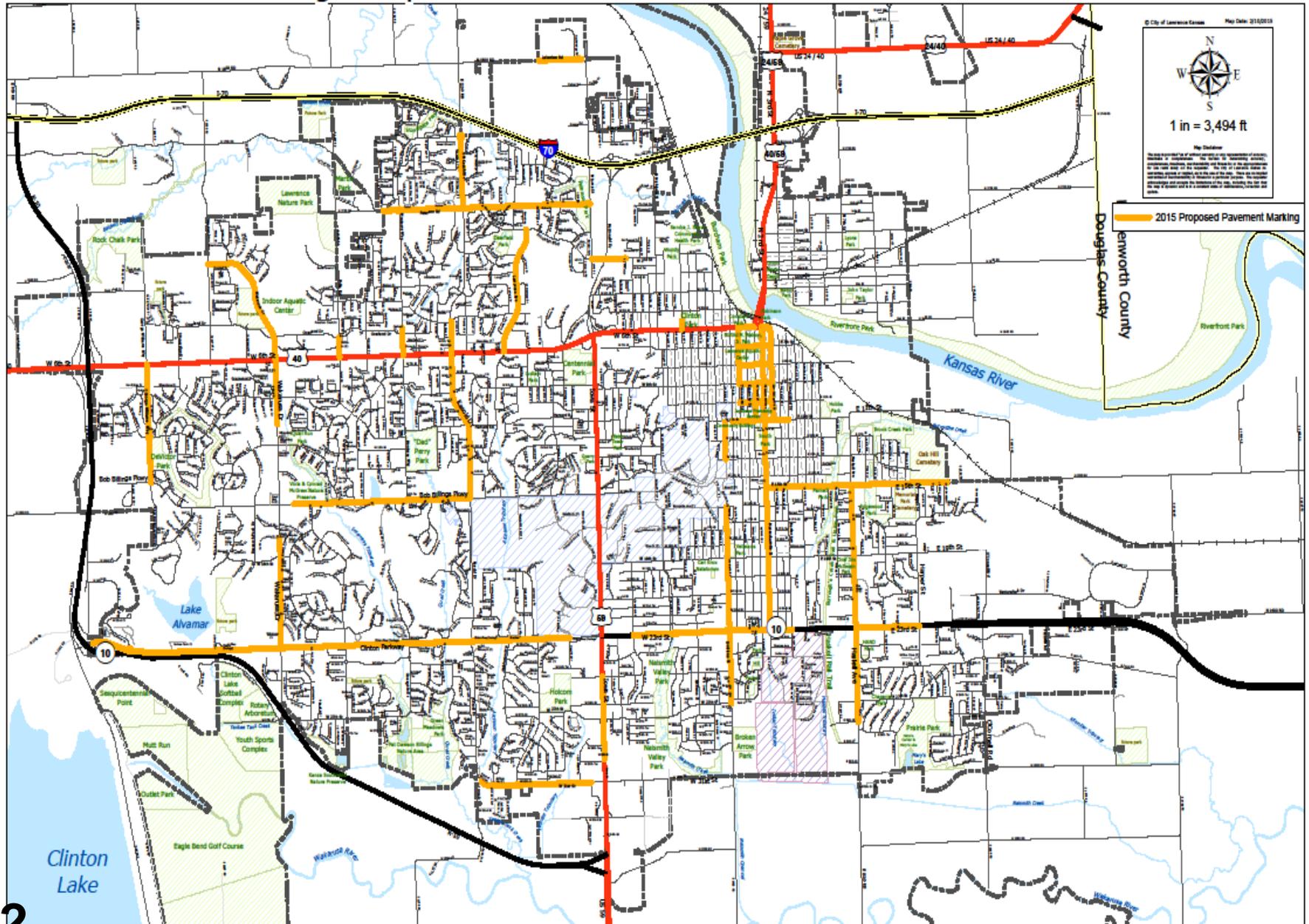
# 2015 Program Projects

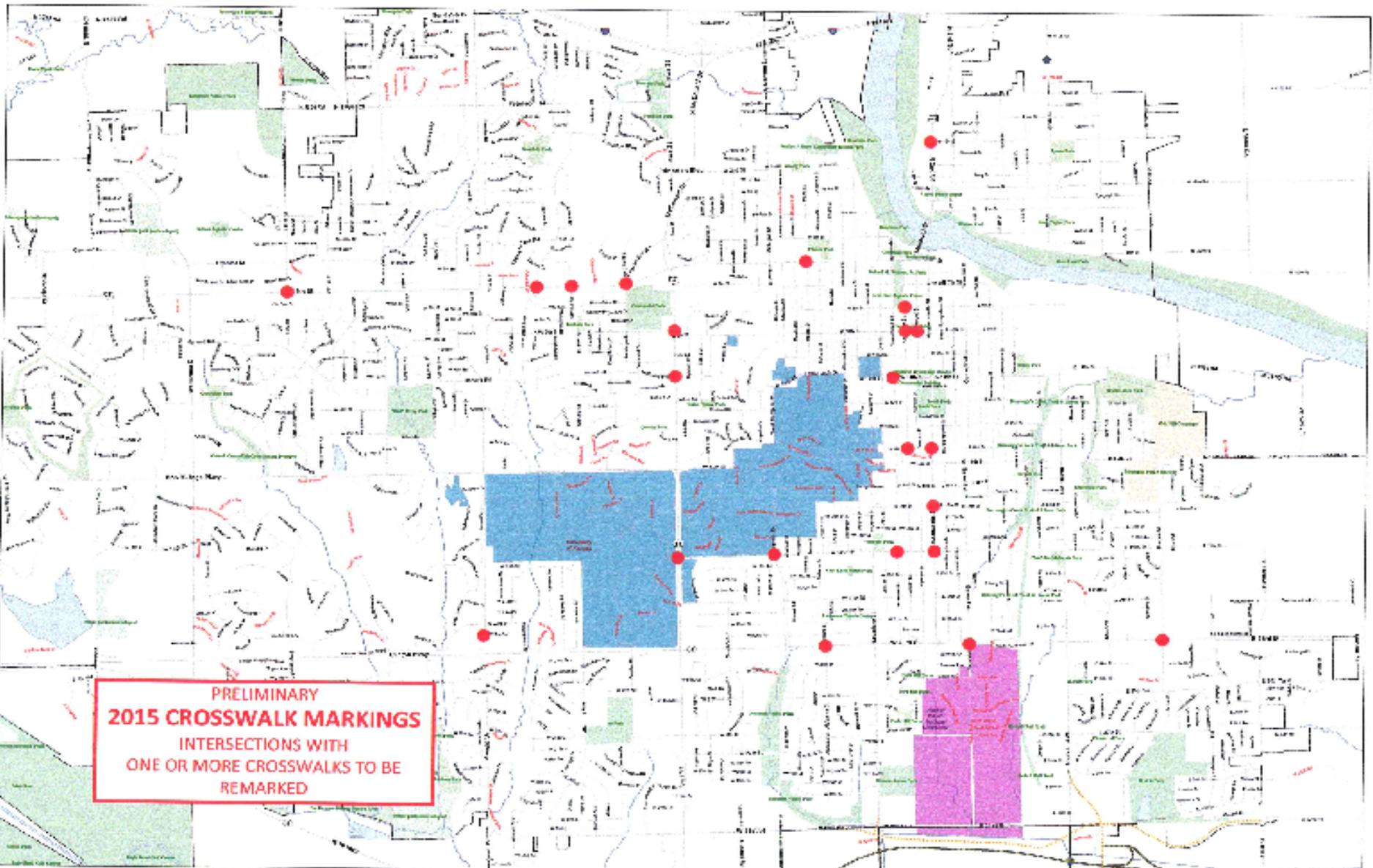
- Crack Sealing (In-House), Wide Joint Sealing, Polymer Patching
- Microsurfacing / Patching (w/ some Mill & Overlay only streets)
- Curb Rehabilitation (In-House and Contracted)
- Mill, Overlay, Curb & Gutter– one phase including some Concrete Rehab
- KLINK – Mill & Overlay – Iowa Street, N. of 23rd St to Irving Hill Rd Bridge and S. of Harvard Rd to S. of 6th St
- Other projects
  - In-house projects
  - Haskell Rail Trail Shared Use Path
  - CDBG Sidewalk Gap
  - Maple St Pump Station
  - Airport Apron (west side)

# 2015 Comprehensive Street Maintenance Program (Proposed)



# 2015 Pavement Marking - Proposed





**PRELIMINARY  
2015 CROSSWALK MARKINGS**  
INTERSECTIONS WITH  
ONE OR MORE CROSSWALKS TO BE  
REMARKED

# 2015 Capital Program

**David Cronin, P.E.**  
**City Engineer**



# 2014 Capital Improvement Projects

- 23<sup>rd</sup> & Iowa Reconstruction - \$4.2M



# 2014 Capital Improvement Projects

- 6<sup>th</sup> & Iowa Turn Lane & Signal - \$2.0M



# 2014 Capital Improvement Projects

- Wakarusa Reconstruction - \$2.1M



# 2014 Capital Improvement Projects

- 31<sup>st</sup> Street – Haskell to O'Connell - \$4.0M
  - Sidewalk, seeding, pavement marking and signing remaining
  - Open 2015



# South Lawrence Trafficway





### City of Lawrence 2015 & 2016 Design & Construction Schedule

Location	Project Description	Project Designer	Design Schedule		Construction Schedule		Jan-2015	Feb-2015	Mar-2015	Apr-2015	May-2015	Jun-2015	Jul-2015	Aug-2015	Sep-2015	Oct-2015	Nov-2015	Dec-2015	Jan-2016	Feb-2016	Mar-2016	Apr-2016	May-2016	Jun-2016	Jul-2016	Aug-2016	Sep-2016	Oct-2016	Nov-2016	Dec-2016
			2012	2013	Nov-2013	Jun-2015																								
31st St Extension - Hastell to O'Connell	Public Improvements	Wilson & Co. (Orwin)																												
Various City Streets*	2015 Overlay Patch & Microsurfacing	In House (Lashley)	Dec-2014	Feb-2015	Apr-2015	Oct-2015																								
Various City Streets*	2015 Overlay & Concrete Rehab	In House (Lashley)	Dec-2014	Feb-2015	Apr-2015	Oct-2015																								
Maple St Pump	Pump Station & Storm Sewer	Bart. & West (Bond)	Jun-2013	Mar-2015	May-2015	Mar-2016																								
Bob Billings Pkwy & George Williams Way	Signal and Geometric Improvements	BG (Orwin)	Jun-2014	Feb-2015	May-2015	Aug-2015																								
O'Connell Road, Venture Park	Roadway Construction	Bart. & West (Bond)	Jan-2015	Feb-2015	Apr-2015	Aug-2015																								
23rd Street - Iowa to Alabama	Street Lighting	BG (Thiel)	Jan-2015	Feb-2015	May-2015	Aug-2015																								
KLINK - Iowa Street	2015 KLINK	In House (Baker)	Jul-2014	Mar-2015	May-2015	Jul-2015																								
Bob Billings Pkwy - Wakarusa to Foxfire	Asphalt Reconstruction	In House (Baker)	2014	Feb-2015	Apr-2015	Jul-2015																								
2014 CDBG	Sidewalk Gap Construction	In House (Voss)	Aug-2014	Dec-2014	Mar-2015	May-2015																								
Haskell Rail Trail	Shared Use Path	In House (Voss)	2014	2014	Mar-2015	Jun-2015																								
Breezedale Monuments	Historic Monument Reconstruction	Hemly (Voss)	2014	2014	Mar-2015	Jun-2015																								
Sante Fe Depot	Sante Fe Depot Renovations	Hemly (Voss)	2014	Jun-2015	Oct-2015	Mar-2016																								
9th Street Delaware to Mass	Reconstruction & Geometric Improvements	El Dorado (Orwin)	Jan-2015	Dec-2015	2016	2016																								
Kasold Drive - BBP to 6th	Geometric Improvements & Reconstruction	RFO (Voss)	Feb-2015	Nov-2015	2016	2016																								
19th Street - Harper to O'Connell	Geometric Improvements & Reconstruction	In House (Voss)	Jan-2015	Aug-2015	2016	2016																								
Various City Streets*	2016 Overlay Patch & Microsurfacing	In House (Lashley)	Dec-2015	Feb-2016	Apr-2016	Oct-2016																								
Various City Streets*	2016 Overlay & Concrete Rehab	In House (Lashley)	Dec-2015	Feb-2016	Apr-2016	Oct-2016																								
23rd & Ouzdahl	Geometric Improvements & Storm Sewer	BG (Bond)	Jan-2015	Dec-2015																										

\* See 2015 comprehensive street maintenance map

Updated February, 2015

# 2015 Capital Improvement Projects

- 31<sup>st</sup> Street – east of Ousdahl
  - Reconstruction of street to city street standards
  - Construction concurrent to Menards Public Improvement Project.
  - Construction Spring 2015
  - City construction cost: \$280,000
  - Menards Public Improvements are constructing shared-use path from Naismith Valley Park to 31<sup>st</sup> & Ousdahl and east along north side of 31<sup>st</sup> St to SLT Project

# 2015 Capital Improvement Projects

- Maple Street Pump Station
  - Construction of pump station at 6<sup>th</sup> & Maple
  - Sidewalk on 6<sup>th</sup> St.
  - Storm sewer and street reconstruction
  - Bid Letting February 24, 2015
  - Construction April to December 2015
  - Estimate construction cost: \$4.0M

# 2015 CIP Bob Billings Parkway



# 2015 Capital Improvement Projects

- Bob Billings Parkway – Wakarusa to Foxfire
  - Pavement Reconstruction
  - Curb Median Improvements
  - Addition of fiber conduit
  - Addition of bicycle lanes
  - Construction Schedule: May – August 2015
  - Estimated construction cost: \$1.2M

# 2015 Capital Improvement Projects

- Bob Billings Parkway & George Williams Way
  - Traffic Signal
  - Turn Lane
  - Construction Schedule: May – August 2015
  - Estimated construction cost: \$775,000

# 2015 BBP Benefit District Project

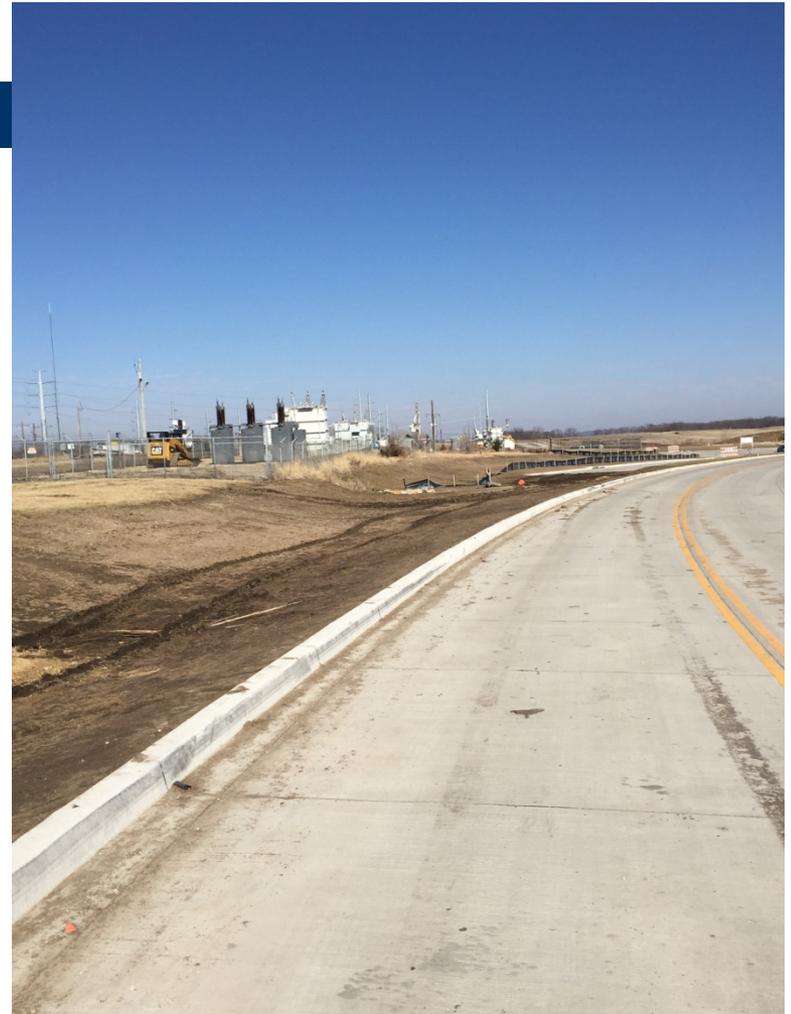
- Corpus Christi Turn Lane
  - Benefit District (0% city participation)
  - Road widening to accommodate Center Turn Lane
  - Construction Schedule: May – August 2015
  - Estimated construction cost: \$250,000

# 2015 KDOT TA Projects

- Haskell Rail Trail – 23<sup>rd</sup> to 29<sup>th</sup> Street
  - Shared-use path concrete paving
  - Construction Schedule: Spring 2015
- Breezedale Monuments – 23<sup>rd</sup> & Mass. St.
  - Restoration of monuments
- Sante Fe Depot Restoration
  - Depot and site work
  - KDOT letting by October 2015

# 2015 VenturePark Infrastructure Completion

- O'Connell Road completion
  - Westar substation to be removed in Spring 2015
  - Benefit District
  - Construction Schedule: May – August 2015
  - Estimated construction cost: \$150,000

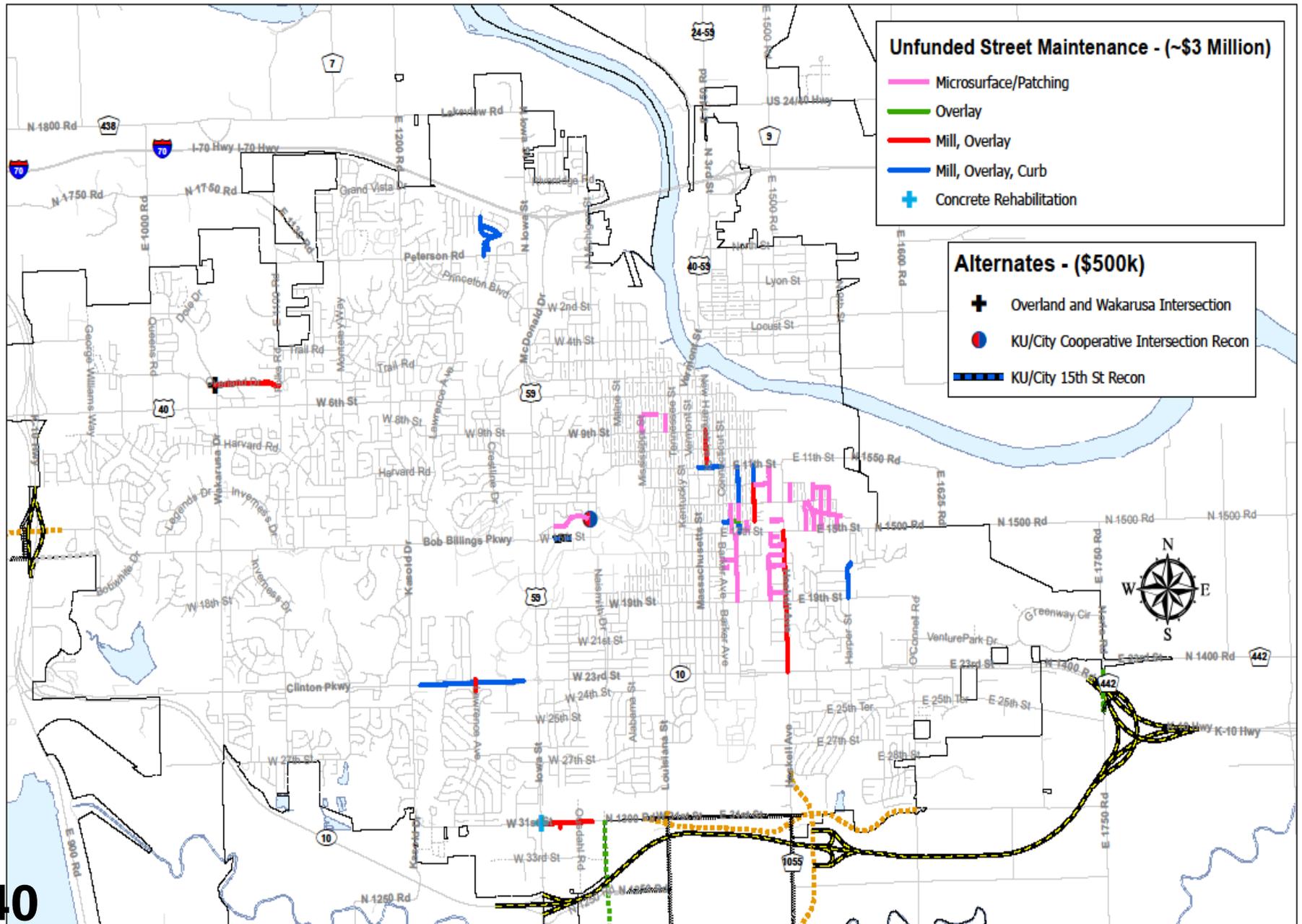


# Planning & Design future projects

- Bob Billings Parkway – Kasold Dr. to George Williams Way
  - Meet with neighborhood to identify priorities
  - Develop Plans
    - Pavement maintenance
    - Intersection Improvements
    - Pedestrian Improvements
- 19<sup>th</sup> Street – Harper to O’Connell
  - Reconstruction
    - (includes pedestrian and bike improvements)
  - In-house Design; survey complete
  - Public Meeting this spring/summer
- Kasold Drive – Bob Billings Parkway to 6<sup>th</sup> Street
  - Reconstruction and Geometric Improvements
    - (includes pedestrian and bike improvements)
  - Public Meeting this spring

# Proposed - 2015 Unfunded Street Maintenance Needs

Date: 2/11/2015



# Example Locations – Not Included in 2015 Program



# Top 20 streets list – Low PCI

STREETNAME	FROM ST	TO ST	PCI
Pennsylvania St	E 11th St	E 12th St	6
Rhode Island St	E 13th St	E 14th St	10
E 25th St	40.5' E of Franklin Park Cir(E)	E 1700 Rd	19.3
E 21st St	Moodie Rd	Haskell Ave	19.5
New York St	29' S of E 12th St	E 13th St	21
E 10th St	41' E of Rhode Island St	Connecticut St	23.8
Vermont St	W 13th St	W 14th St	23.8
E 12th St	New Jersey St	37' E of Pennsylvania St	24
E 12th St	Rhode Island St	Connecticut St	24.1
N 8th St	27' N of Hickory St	NEOS ROW	24.3
W 8th St	Kentucky St	Tennessee St	27
E 12th St	Connecticut St	New York St	28.3
Rhode Island St	24' S of E 12th St	E 13th St	28.3
E 12th St	New Hampshire St	Rhode Island St	28.3
Iowa St	150' S of Princeton Blvd	SEOP	29
E 14th St	Pennsylvania St	239' E of Delaware St	29.1
E 21st Ter	Moodie Rd	Haskell Ave	29.6
Moodie Rd	E 19th St	150' S of E 21st Ter	30
Missouri St	W 8th St	W 9th St	30
W 8th St	38' W of Mississippi St	Maine St	30.3

# Public Communication

- Public Meetings
- Mass mailings
- Open houses
- Water Billing insert
- Message boards
- Project advance notice signs
- City Website

PAVING

45

PAVING

SUNRAY

929

# Questions?

