

# E. Stadium Bridges Replacement Project

## An Overview and Progress Report



Project Management Services Unit  
May 10, 2010

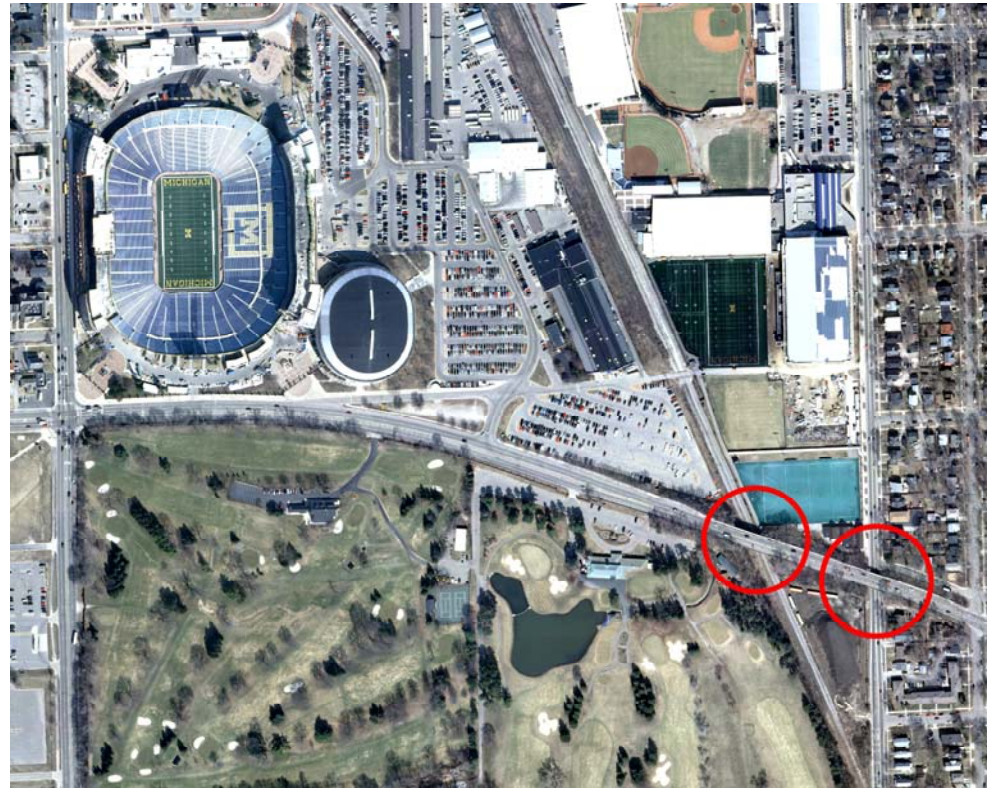
## E. Stadium Bridge over S. State Street



- 2009 Federal Sufficiency Rating (FSR) - 2 out of 100
- November 2009 – removed 5 of the 16 box beams
- Now in the Temporary Bridges category
- Reduced Traffic lanes from 4 to 2, one lane in each direction

## E. Stadium Bridges Replacement Project (ESB)

- Initial project planning included the reconstruction of E. Stadium Blvd, from S. Main Street to S. Industrial
- 2005 - Applied for the MDOT FY2006 Local Bridge Program
- 2006 - Began the preliminary design of the E. Stadium Blvd Improvement Project
- 2008- Applied for the Federal Congestion Mitigation and Air Quality (CMAQ) Grant
- 2009 - Reduced the E. Stadium Blvd Improvement project's scope and focused on the replacement of the bridges only
- 2009 – Requested to be on the US-DOT list for High Priority Projects (HPP)
- 2009 - Applied for the MDOT FY2012 Local Bridge Program



## E. Stadium Bridges Replacement Project

- 2009 - Applied for the American Recovery and Reinvestment Act (ARRA) - TIGER Discretionary Grant
- 2010 - Received the Washtenaw Area Transportation Study (WATS) approval for the FY 2011-2014 Federal Surfaced Transportation Fund (STPU)
- 2010 - Applied for the Federal Transportation Enhancement (TE) Grant, for the Non-Motorized improvements at the Bridges
- 2010 - Will apply for the MDOT FY2013 Local Bridge Program
- 2010 – Will apply for the Federal TIGER-II Grant
- 2010 – Will complete the project's construction plans and specifications
- 2011 – Will begin the reconstruction of the Bridges
- 2012- Will complete the construction of the project



# Alternative Improvement Plans Considered

## “At-Grade Crossing”

- Ann Arbor Railroad (AARR) showed opposition to this option
- Due to the proximity of the two bridges, it is impractical to maintain the Bridge over the AARR, and build a new four-way intersection at E. Stadium Blvd and S. State St
- A standard signalized intersection must manage approximately 28,000 vpd at E. Stadium Blvd, and 20,000 vpd at S. State St, AND must clear the queues created by the railroad crossing (ex. Eisenhower Blvd and S. State Street Intersection, but without the compounded traffic impact at a railroad crossing)
- Requires over ½ mile of streets re-alignments with large impacts on the adjacent properties, at E. Stadium Blvd and S. State St
- Large impacts on the local residents due to future cut-through traffic (ex. E. Stadium at Packard St)
- A significantly more expensive option over the 75-Year projected life of the bridges

# Alternative Improvement Plans Considered “At-Grade Crossing”



# Alternative Improvement Plans Considered

## “1 Bridge” vs. “2 Bridge” Construction

- ESB were constructed in 1917 and 1928
- By today’s standards, both bridges are “functionally obsolete” (low/narrow clearances, narrow traffic lanes, no bike lanes, no/or narrow sidewalks)
- \$3,600,000 project minimum cost increase (today’s cost-next slide) to build one bridge at a time, with less Federal/State funds for the Phase I
- Loss of economies of scale
- Increased construction duration – about 1.5 times longer
- Repeated traffic detours, longer local exposure to highly congested roads
- Removal and replacement of some parts that are constructed first
- Construction staging challenges and multiple access agreements with the UM and increased rental fees



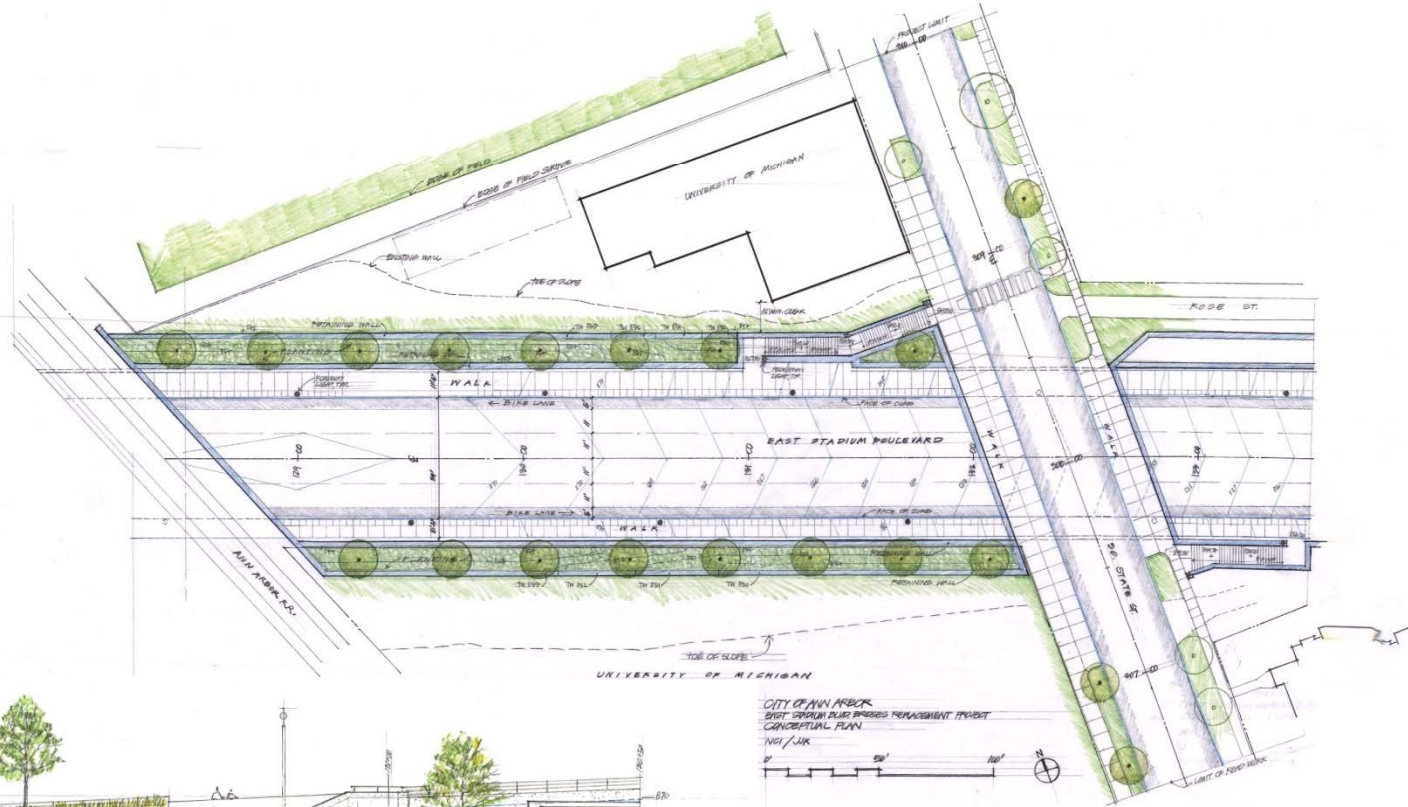
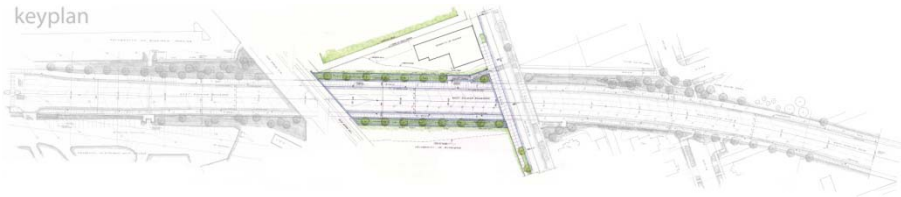
**E. Stadium Boulevard Bridges Replacement Project\*\*\***  
**1 Bridge vs. 2 Bridge Cost Comparison**  
**March 9, 2010**

Construct S. State Street Bridge Only			Construct Ann Arbor Railroad Bridge Only**			Construct both bridges simultaneously		
Item of Work		Estimated Cost	Item of Work		Estimated Cost	Item of Work		Estimated Cost
S. Street Bridge		\$1,934,000	Ann Arbor RR Bridge		\$2,766,000	S. State Street Bridge		\$1,934,000
Roadway Construction		\$1,795,000	Roadway Construction		\$2,030,000	Ann Arbor RR Bridge		\$2,766,000
Utility Construction		\$201,000	Utility Construction		\$226,700	Roadway Construction		\$3,825,000
MSE Wall (Field Hockey Area)		\$1,011,000	MSE Wall (Crisler/SC-7)		\$351,000	Utility Construction		\$427,700
MSE Wall ( Red Lot)		\$1,067,000	MSE Wall (Golf Course)		\$905,000	MSE Wall (Field Hockey Area)		\$1,011,000
MSE Wall (S. State to White )		\$511,000	Restoration/Street Light/Misc. Costs		\$195,000	MSE Wall (Red Lot)		\$1,067,000
Retaining Wall - Rose Street		\$409,000						
Restoration/Street Light/Misc. Costs		\$154,000	Allen's Creek Culvert Replacement		\$385,000	MSE Wall (S. State to White)		\$511,000
DTE Cable Relocation Costs		\$303,000	U of M Pedestrian Tunnel Extension		\$300,000	MSE Wall (Crisler/SC-7)		\$351,000
			Raw Water Main Replacement		\$607,000	MSE Wall (Golf Course)		\$905,000
Repairs to E. Stadium Boulevard (Temp)		\$41,000	Additional Detour Route Costs (inc. Signs and Signals work)		\$63,000	Retaining Wall - Rose Street		\$409,000
			Remove and Replace Roadways - 2nd time		\$458,000	Allen's Creek Culvert Replacement		\$385,000
Economy of Scale Costs		\$519,800				U of M Pedestrian Tunnel Extension		\$300,000
			"Staged" Retaining Wall increases		\$312,000	Raw Water Main Replacement		\$607,000
Engineering, Testing, Inspection Costs		\$3,734,500	DTE Cable Relocation Costs - 2nd time		\$100,000	Restoration/Street Light/Misc. Costs		\$349,000
(includes 10% contingency amount)						DTE Cable Relocation Costs		\$353,000
U of M Red Lot "Rental"		\$500,000	Economy of Scale Costs		\$580,100			
U of M Field Hockey Repair/Coordination		\$100,000						
Signs and Signals Work on Detour Route		\$25,000	Engineering, Testing, Inspection Costs		\$4,361,000	Engineering, Testing, Inspection Costs*		\$7,144,300
			(includes 10% contingency amount)			(includes 10% contingency amount)		
			U of M Red Lot "Rental"		\$500,000	U of M Red Lot "Rental"		\$500,000
			U of M Field Hockey Repair/Coordination		\$100,000	U of M Field Hockey Repair/Coordination		\$100,000
						Signs and Signals Work on Detour Routes		\$25,000
<b>TOTAL PROJECT COST</b>		<b>\$12,305,000</b>	<b>TOTAL PROJECT COST</b>		<b>\$14,240,000</b>	<b>TOTAL PROJECT COST</b>		<b>\$22,970,000</b>
			Cost of Bridge 1 (S. State Street) =		\$12,305,000	<b>Notes:</b>		
			Cost of Bridge 2 (Ann Arbor Railroad) =		\$14,240,000			
						* This value will be less than the stated value based on the magnitude of the project.		
			sub-total		\$26,545,000	However, for the purposes of this analysis, the same percentage of the project's		
						estimated construction costs were used to calculate this value.		
			less cost of 2 Bridge Opt		\$22,970,000	** Cost increases due to inflation are not presented in this table, but are discussed in		
						the accompanying memorandum.		
			<b>Difference</b>		<b>\$3,575,000</b>	*** All costs are reported in 2009 dollars.		

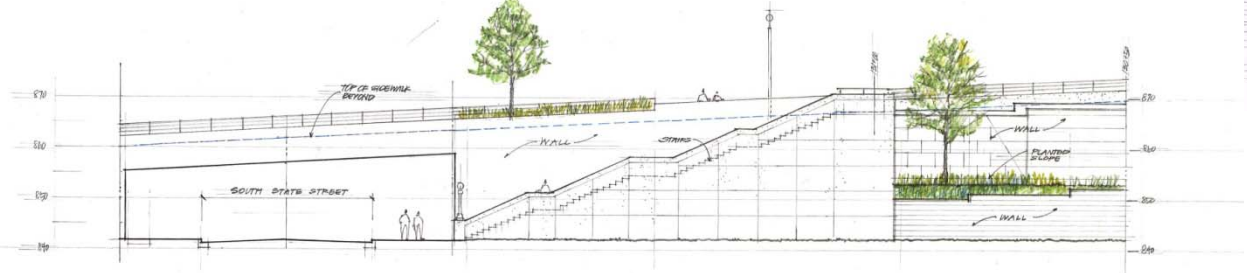


# Proposed Design

keyplan



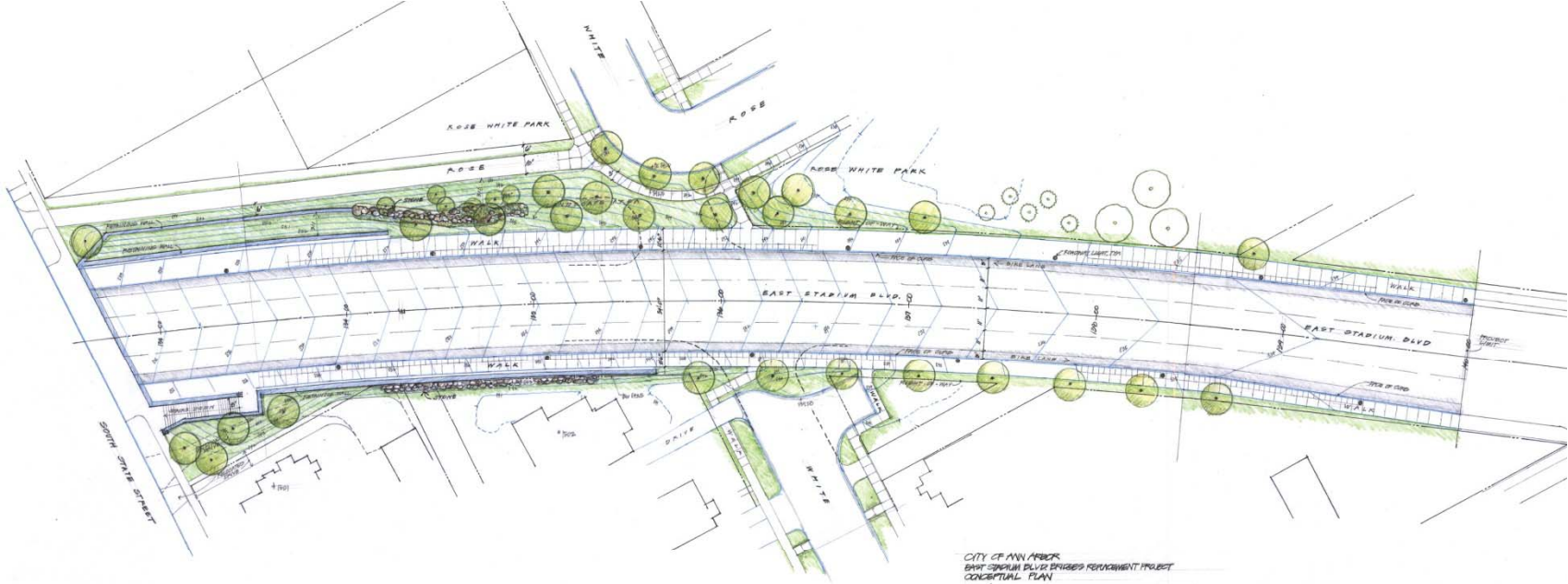
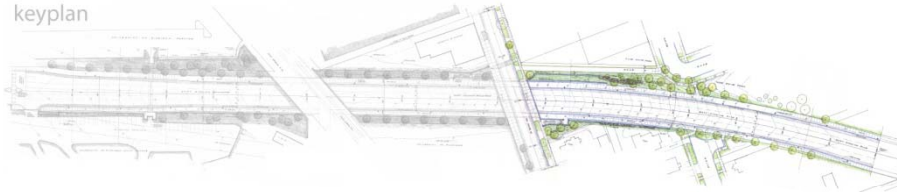
CITY OF ANN ARBOR  
EAST STADIUM BLVD PARKS RENOVATION PROJECT  
CONCEPTUAL PLAN  
1/21/18



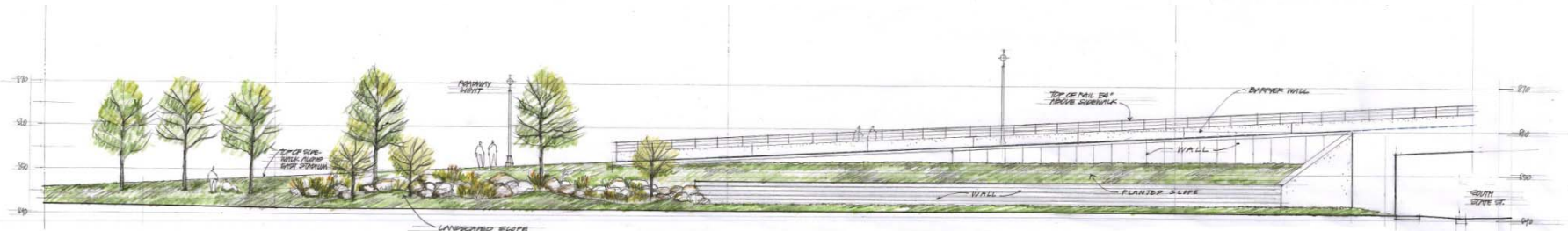
ELEVATION LOOKING SOUTH

# Proposed Design

keyplan



CITY OF MINNAPOLIS  
EAST STADIUM BLVD PARKING REFINEMENT PROJECT  
CONCEPTUAL PLAN  
10/1/10  
0' 50' 100'



ELEVATION LOOKING SOUTH  
0' 50'

# Final Design Elements

- Implements the Non-motorized Transportation Plan
- Consistent with **USDOT Policy** addressing integrated, active transportation networks.
- Fulfills “**Complete Streets**” philosophy providing all users safe and equal access.
- The project is fully **ADA Compliant**.
- Consistent with other recently reconstructed segments of Stadium Blvd.



# Detailed Design Elements

Bridges meet today's standards:

- Wider and longer structures accommodate all means of travel
- Include on-street bike lanes, sidewalks and stairs
- Replace storm sewer, raw water transmission main, and some sanitary sewer
- Retaining walls minimizing ROW needs, appropriate railings and lighting
- Restoration of disturbed areas including portions of Rose-White Park





## E. Stadium Blvd Bridges Replacement Project

### Tentative Project Funding Schedule

Funding Source	Prior Yrs	FY 10	FY 11	FY 12	FY13	FY 14	Total
Federal STU Funds			1,187	2,353	2,821	1,639	\$8,000
Transportation Enhancement Funds*			1,500				\$1,500
MDOT Local Bridge Program Funds*					3,000		\$3,000
City of A2 - Water Funds (Fund 0092)	57		900				\$957
City of A2 - Storm Water Funds (Fund 0069)	175		1,220				\$1,395
City of A2 - Sanitary Sewer Funds (Fund 0076)	0		113				\$113
City of A2 - Street Reconstruction Millage (Fund 0062)	602	249	3,491	2,865			\$7,208
City of A2 - Major Street Fund (Fund 0021)	509						\$509
City of A2 - Alternative Transportation Fund (Fund 0063)	319						\$319
<b>TOTAL</b>	<b>\$1,662</b>	<b>\$249</b>	<b>\$8,411</b>	<b>\$5,218</b>	<b>\$5,821</b>	<b>\$1,639</b>	<b>\$23,000</b>

**NOTES:**

All values are represented in thousands of dollars

\* denotes funds that have not yet been secured, but for which have been applied.

# Streets Reconstruction Millage

## Bridge Repairs and Replacements

<b>Project Name</b>	<b>Year</b>	<b>Street Millage Expended</b>	<b>Total Project Cost</b>	<b>Percent St Mill/Tot</b>
Fuller Road Bridge Replacement	1994	\$690,800	\$3,038,000	23%
Huron Parkway Bridge Rehabilitation	2000	\$3,800,000	\$5,960,200	64%
Broadway Bridges Reconstruction	2004	\$5,839,900	\$28,242,900	21%
Eisenhower Parkway Bridge Rehabilitation	2005	\$1,282,200	\$1,622,200	79%
Huron Parkway Bridge Painting	2007	\$502,100	\$1,353,100	37%
E. Stadium Boulevard Bridges Replacemen	2012	\$7,208,000	\$23,000,000	23%
		\$19,323,000	\$63,216,400	31%

# Streets Paving Frequency and Pavement Condition

	Center Line Miles	Lane Miles
2006	4.8	9.5
2007	5.0	12.4
2008	3.7	7.8
2009	6.9	14.3
2010	4.1	11.9
Average	4.9	11.18

## 2009 PAVER Ratings - Major Roads

PAVER Rating		Lane Miles	Percentage
0-9	Failed	0	0%
10-24	Serious	0	0%
25-39	Very Poor	4.5	1.20%
40-54	Poor	7.9	2.20%
55-69	Fair	70.2	19.40%
70-84	Satisfactory	146.3	40.40%
85-100	Good	133.5	36.80%
		362.4	100%

## 2009 PAVER Ratings - Local Roads

PAVER Rating		Lane Miles	Percentage
0-9	Failed	0	0%
10-24	Serious	0	0%
25-39	Very Poor	0.5	<1%
40-54	Poor	3.9	1%
55-69	Fair	26.8	7%
70-84	Satisfactory	143.3	38%
85-100	Good	201.8	54%
		376.3	100%

## Summary

### **E. Stadium Bridges (ESB) Replacement Project**

- The proposed ESB project scope meets today's standards, and provides design solutions that will best serve Ann Arbor for the long term
- The proposed ESB project is planned for construction in the calendar years 2011 and 2012
- The construction project is expected to be financed from Federal, State and Local sources.

### **Streets Pavement Condition**

- The current street resurfacing millage can pay for more street resurfacing in FY 2013, and FY 2014 - after the ESB Project cost reimbursements by the Federal Surface Transportation Fund and the MDOT Local Bridge fund
- The pavement deterioration rate for the streets is expected to remain the same for the next few years
- The current streets resurfacing millage will expire after FY 2012
- If the Street Resurfacing Millage is renewed at the same rate (2 mills) and for the same frequency (5 years) as in the earlier years, the overall streets' pavement condition may remain the same for the next 5-8 years