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Stanislaus County Bridge Preventative Maintenance Program (BPMP)

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MARK THOMAS & COMPANY

Providing Engineering, Surveying & Planning Services

Bridge Nerd



What Is the goal of BPMP?

- Maintain the existing inventory of bridges in good or fair condition rating.
- Correct minor structural deficiencies early in a bridge's life, before a bridge has problems requiring costly rehabilitation, reconstruction or replacement.
- Extend the service lives of existing bridges.
- Make efficient use of limited resources.



What work is NOT covered?

- Routine Bridge Maintenance
 - Repair or replacement of damaged (due to collisions) bridge railing, transition railing, and approach guardrails.
 - Painting over graffiti or graffiti removal.
 - Repair or replacement of warning signs and object markers at approaches.
 - Clearing of brush and overgrowth at bridge ends.
 - Bearing lubrication.
 - Minor concrete repairs (such as concrete spalls).
 - Temporary shoring of bridges for load carrying capacity problems.



What work is covered?

Degradation and Scour



Joints and Bearings



What work is covered?

Replacement of deteriorated railing.



Spot Painting



What work is covered?

Deck AC replacement



Repair, restoration & strengthening of structural members



Why might you want to utilize
the BPMP program???





Okay... sounds interesting.
How do you do this?



Stanislaus County Bridge Statistics

- Total of 225 County Bridges

CROSSINGS

- 152 Cross Canals
- 70 Cross Natural Waterways
- 3 Cross Railroads

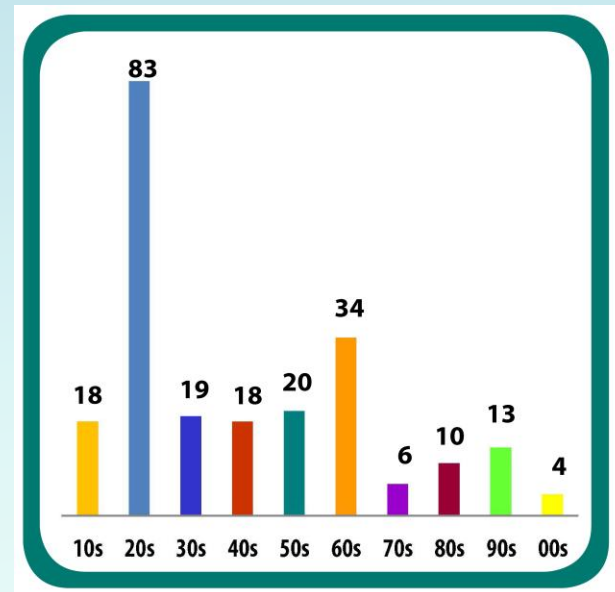
AGE STATS

- Oldest Bridge: 38C0215 Rogers Road over Del Puerto Creek (constructed in 1911)
- Average Bridge Age: 70 years (constructed in 1945)

FEDERAL AID SYSTEM

- 85 "On-System"
- 140 "Off-System"

Number of Bridges Constructed per Decade

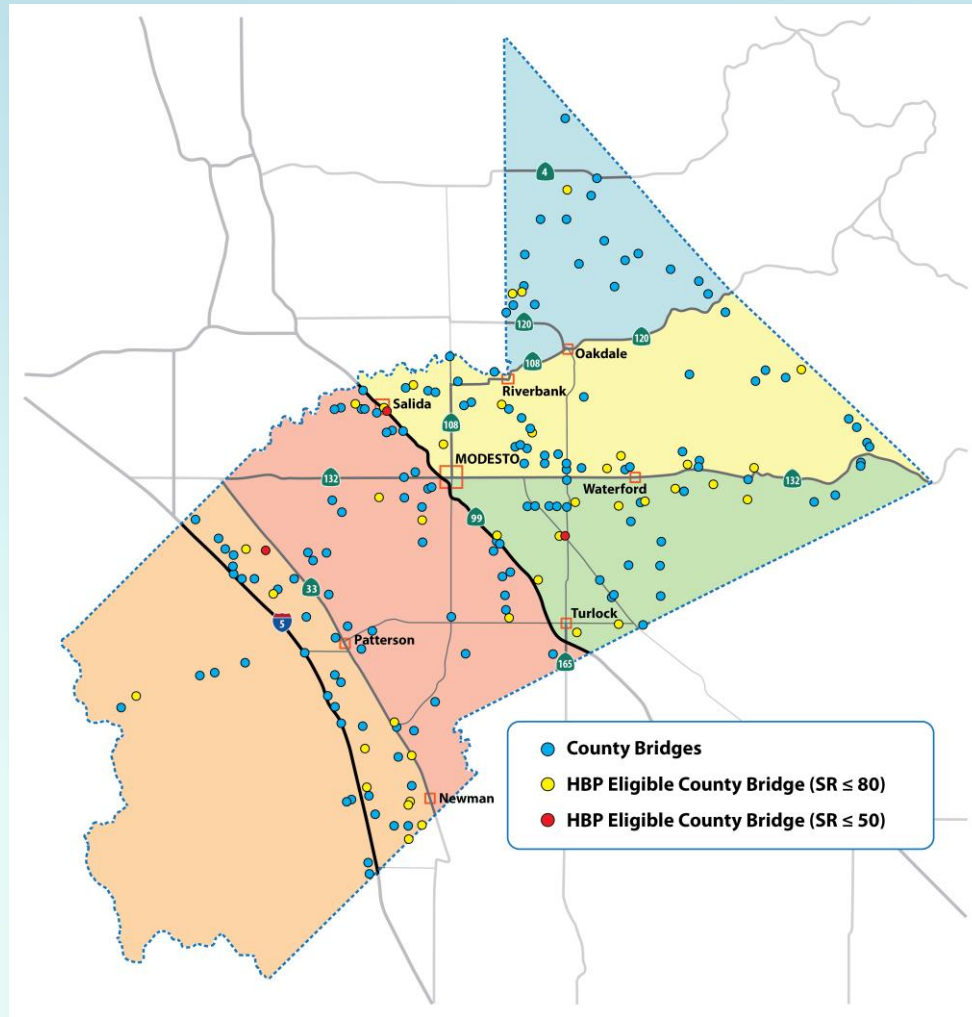


LENGTH

- Shortest – 21 feet
- Longest – 1251 feet
- Average Length – 120 feet



203 Bridges Evaluated



County Priorities

1. Scour countermeasures
2. Repair of structural defects
3. Heavily used roadways (focus high ADT)
4. Bridges over natural waterways
5. Bridges with substantial length



Reviewed BIR's

- Created a matrix to simplify information
- 24 items from SI&A sheet
- Work recommendations
- Allowed us to gain an overall picture of the condition of the structure, including past work items that had been completed
- Reviewed BIRs, typically as far back as 1980's



Eligible vs. Non-Eligible

- Split the list into HBP eligible and non-eligible
- 34 eligible for funding
 - 5 looked good
 - 15 recommended for programming
 - 14 should be considered for programming
- Obviously can't program 29 more bridges
- Identified 10 additional bridges that weren't eligible but were recommended for replacement
 - Bridges over 90 years old, in poor condition, with a history of deterioration



Review Results with County

- Meet with County to discuss the list and we narrowed down the list
- 19 looked OK but we would program in BPMP where appropriate
- 7 bridges to program
- 8 not to program now but to be considered in the future
- 7 to discuss with Caltrans
- Opportunity to clean up inventory



Borderline Bridges

- 7 bridges on the cusp of being eligible that we coordinated on with Caltrans.
- 2 of these the ABME was able to relook at and modify ratings such that now they are eligible.
- We are waiting to hear on the other 5.



Inspections

- Inspected 30 waterway crossings
- 25 canal bridges – postpone until winter
- Revised matrix to include inspection results. Identified bridges for future inspection in winter and held those out of the BPMP (25 bridges).



What was the intent?

- Verify condition in the field matches those in inspection report
- Look for additional work recommendations not noted
- Look for completed repairs
- Document and plan for needed repairs

STANISLAUS COUNTY BRIDGE INSPECTION REPORT

Bridge No. 38C0043 Inspection Date 06/15/16

Bridge Name River Road over Crestmbs Creek Bridge Inspector Jason Hickey

Date of CT Inspection 10/01/15 Structure Length 25.9 ft Sufficiency Rating 95.8

Year Built 1958 Widened N/A Structure Total Width 10.0 ft Status N/A

CONDITION RATING

	SM&I	Agree	Disagree	Notes	Follow-Up with CT needed?
(58) Deck	8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AC overlay fair to poor condition. Recommend removal. Scour concerns. High priority recommended for scour repairs.	<input type="checkbox"/>
(59) Superstructure	8	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
(60) Substructure	7	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
(62) Culvert	N	<input type="checkbox"/>	<input type="checkbox"/>		

ADT

	SM&I	COUNTY	Follow-Up with CT needed?
(29) ADT	1572		<input type="checkbox"/>
(30) Year of ADT	2005		
(114) Future ADT	4024		
(115) Year of Fut. ADT	2032		

RAIL

	SM&I	Follow-Up with CT needed?
(36) Traffic Safety	1110	<input type="checkbox"/>
Rail Description		
Condition of Rail		

SCOUR

	SM&I	Follow-Up with CT needed?
(113) Scour	5	<input checked="" type="checkbox"/>
Previous Scour Plan of Action?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	
Scour Assessment:	Concrete pile exposed below CMP Steel extension by up to exposed 3ft.	

WORK RECOMMENDATIONS

	Follow-Up with CT needed?
Work Recommendations from CT:	<input checked="" type="checkbox"/>
Additional Work Recommendations from Inspection:	
Scour countermeasures needed at bents.	



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What did you find?



What did you find?



Results

- Preparing BPMP for 61 bridges
- \$6 million in work (including prep of next BPMP)
- Split into 8 “projects”
 - Scour – east and west
 - Deck treatment, joint seals, approach roadway –east and west
 - Concrete spall repairs (incl. barrier repair) – east and west
 - Timber railings
 - Golden State Blvd



Summary

- BPMP can help fund desperately needed maintenance to extend the life of your infrastructure
- Program can reimburse work you are already doing
- Allow funding to be saved for replacement and rehabilitation projects
- Gain better understanding of your inventory

