

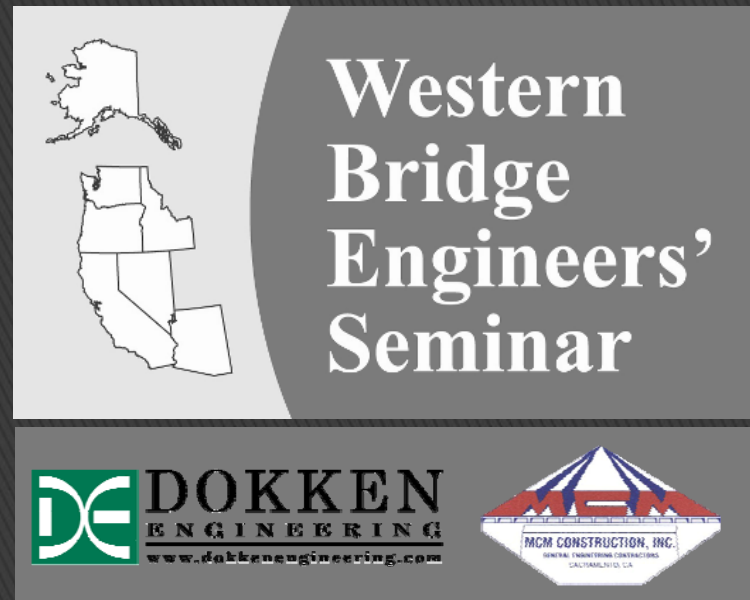
Close It and Build It Quickly

Why We Build Too Many Projects Under Staged Construction

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September 22, 2009

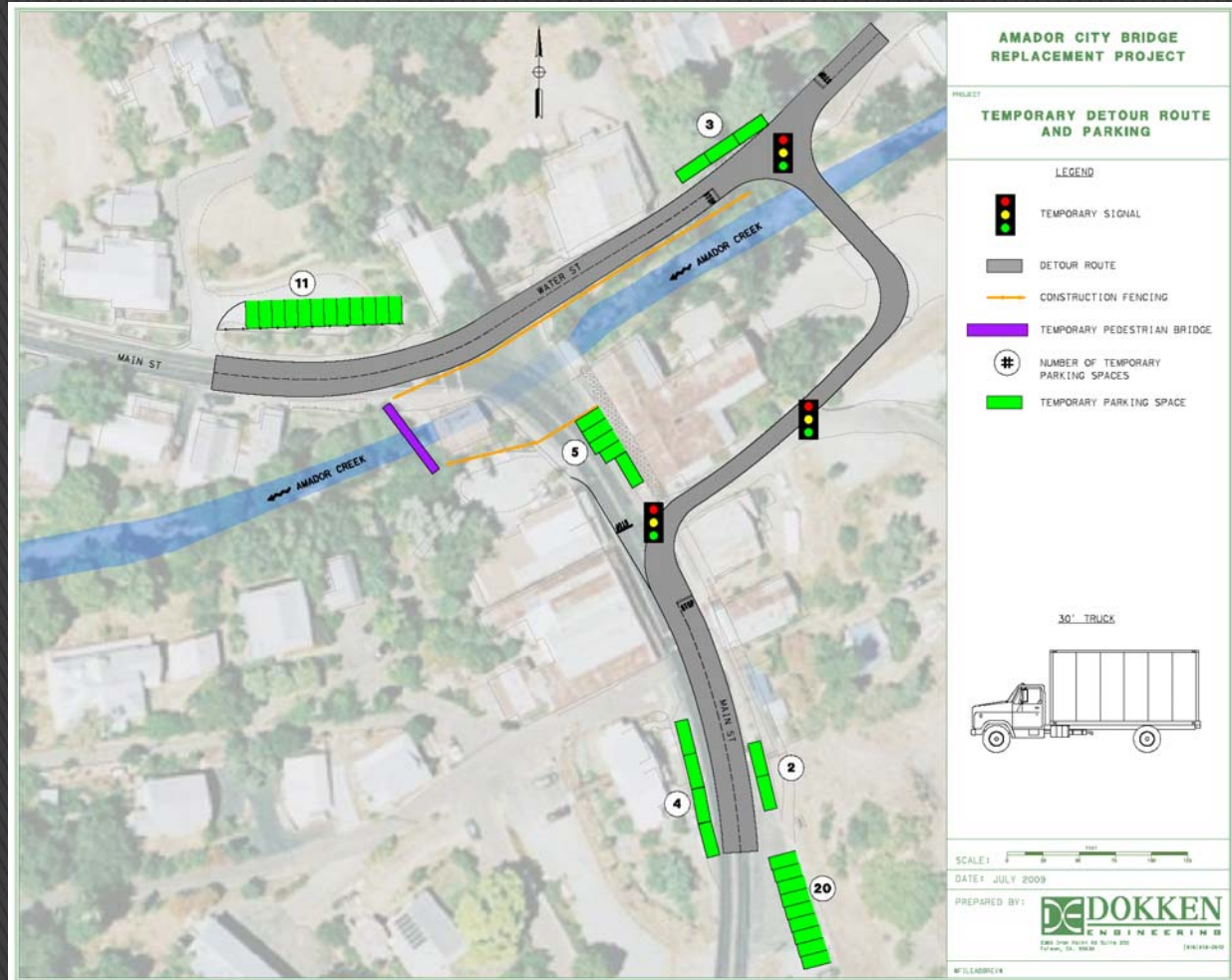


- ▶ Evaluate the Closure Opportunity
- ▶ Keep Option for Closure in Environmental
- ▶ Present the Choice to the Public
- ▶ Examples of Recent Closures with Detours
- ▶ **Costs of Stage Construction**
- ▶ **Risks of Stage Construction**



Evaluate Closure Opportunity

- ▶ Is Vehicular Detour Available?





Evaluate Closure Opportunity

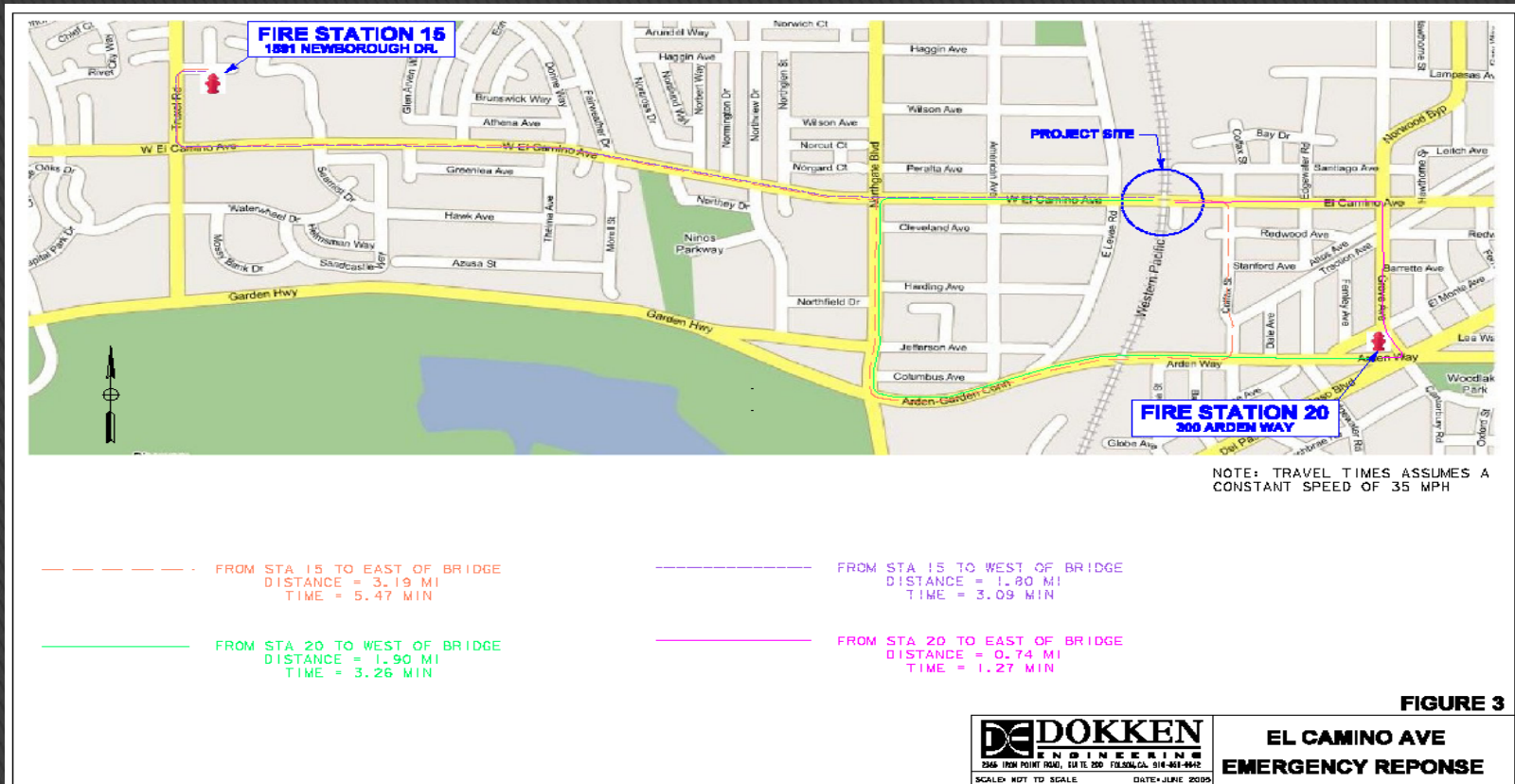
- ▶ Do Pedestrians Need Alternative Routes?





Evaluate Closure Opportunity

Emergency Response





Evaluate Closure Opportunity

- ▶ Transit Operations
- ▶ School Bus Routes
- ▶ All Access Needs Accounted For
- ▶ Utilities Accounted For



Keep the Option Open for Closure

- ▶ Create the Best Closure Plan You Can?
 - Requires Some Extra Design Effort
- ▶ Evaluate It In the Environmental Review?
- ▶ Let the Public Comment On It?
- ▶ Don't Assume the Closure Will Not Work?



Presenting to the Public

- ▶ Open House and Invite the Community
- ▶ Know Your Site
 - Emergency Response
 - Pedestrian Needs
 - Adjacent Businesses
- ▶ Present Schedules of Staged and Single Phase Construction
- ▶ Ask Them for Their Concerns & Preference



Working Day Comparison

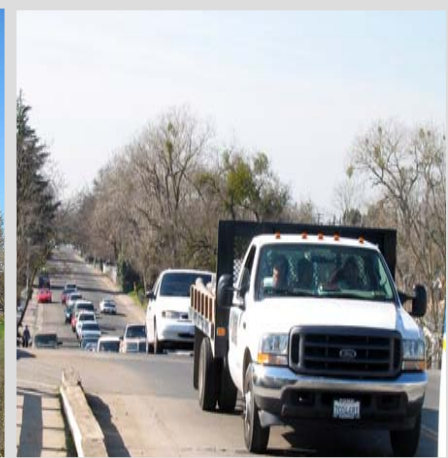
STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION
SUGGESTED WORK SCHEDULES
DPD-OSD-0037 (REV. 2/92)

PROJECT	CU	EA	COMPILED BY	DATE																					
Amador City Bridge			Matt Griggs, PE	2/10/2009																					
District: 10 County :AMA Route:Main St. Post Miles (KP) : N/A																									
Number of Days Allotted <u>100</u> Bridge Name: Main Street Bridge over Amador Creek: Two-Stage Construction																									
DESCRIPTION OF WORK	25 Work Days																								
	May	June	July	Aug	Sept	Oct	Nov																		
Mobilization	X	X																							
Shore & Raise City Hall	X	X																							
Utility Bypasses	X	X																							
Shift Traffic		X																							
Rmv (E) Bridge, (Stage)		X																							
Creek & Abut Excavation			X					X																	
Form Abutment Footings				X				X																	
Place Abutment Fting Steel				X				X																	
Pour Abutment Footings				X					X																
Form Abutments				X	X				X	X															
Place Abutment Steel				X	X				X	X															
Pour Abutments				X					X																
Erect Falsework					X					X															
Form Deck and Grade					X					X															
Place Deck Steel						X	X				X														
Install Utility Casings						X	X				X														
Pour Deck							X				X														
Approach Roadway						X	X	X	X			X	X	X	X										
Bridge Opened to Traffic								X						X											
Remove Falsework								X						X											
Place Sidewalk and Barrier								X	X						X	X									
Final Cleanup									X	X							X	X							
	STAGE 1 CONSTRUCTION												STAGE 2 CONSTRUCTION												

Bridge is not closed to traffic
Overall Construction duration is 26 weeks



Example, (West) El Camino Avenue Bridge





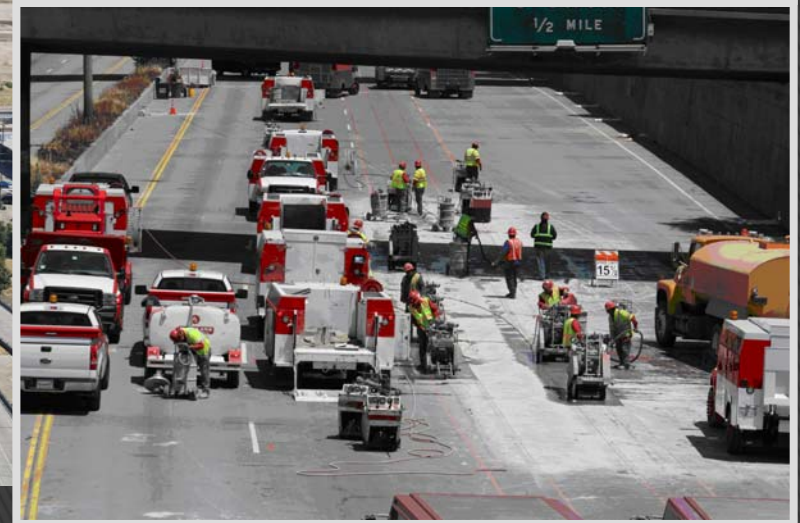
Example, Amador City Bridge

- Small Rural City
- Design Pending





Example, I-5 Big Fix Caltrans Project





Contractor's Perspective

- ▶ Cost
- ▶ Quality
- ▶ Manpower
- ▶ Overhead



Single Stage Construction is Less....

- ▶ ... Cost / Overall Total Work
- ▶ ... Environmental Impact
- ▶ ... Length of Business Interruption
- ▶ ... Owner Project Administration



Cost of Staged Construction

- ▶ Traffic Handling (K Rail, Striping, Signage)
- ▶ Temporary Drainage
- ▶ Shoring
- ▶ Higher Production Rate



Constructed Project, Main Avenue Bridge

- ▶ Shoring, Safety, Traffic Control





Western
Bridge
Engineers'
Seminar

Close It and Build It Quickly

Constructed Project, Staged Work





Hesperian Boulevard, San Leandro, CA

- ▶ 3 Stage Replacement





Constructed Project, Fresno, CA

- ▶ Shoring Adjacent to Traffic





Environmental Impacts

- ▶ Eliminate Season(s) Impact to Waterways
- ▶ Winterizing
- ▶ SWPPP Maintenance



Conclusion: Consider Closure!

- ▶ **Study it... ...Because the Contractors Will !**
- ▶ Find Work-Around for Hurdles ...
- ▶ Let the Public Comment on it...
- ▶ Be Mindful the Contractors Got to Build it...



Western
Bridge
Engineers'
Seminar

Close It and Build It Quickly

Questions?



Example, I-5 Big Fix

▶ Caltrans Project





Recent Examples

- ▶ West El Camino Avenue Bridge, Sacramento
- ▶ Amador City Bridge, Small Rural City
- ▶ I-5 Big Fix, Downtown Sacramento
- ▶ Curry Creek Bridge, Rural Collector Roadway



- ▶ Curry Creek Bridge, Rural Collector Roadway
 - Construction Planned in 2010

