



Bucks Bar Road Bridge Replacement

February 4, 2014

**Presentation to Board
of Supervisors:**

**Recommended
Alignment for Bridge
Replacement**





Bucks Bar Road Bridge Replacement

Project Facts:

- **Bridge built in 1940**
- **One lane (18.5 feet wide)**
- **4,200 vehicles/day**
- **Single-span concrete arch type**
- **Federal funding (88.53%) to replace or rehabilitate**
- **Included in County's Capital Improvement Program**



Bucks Bar Road Bridge Replacement

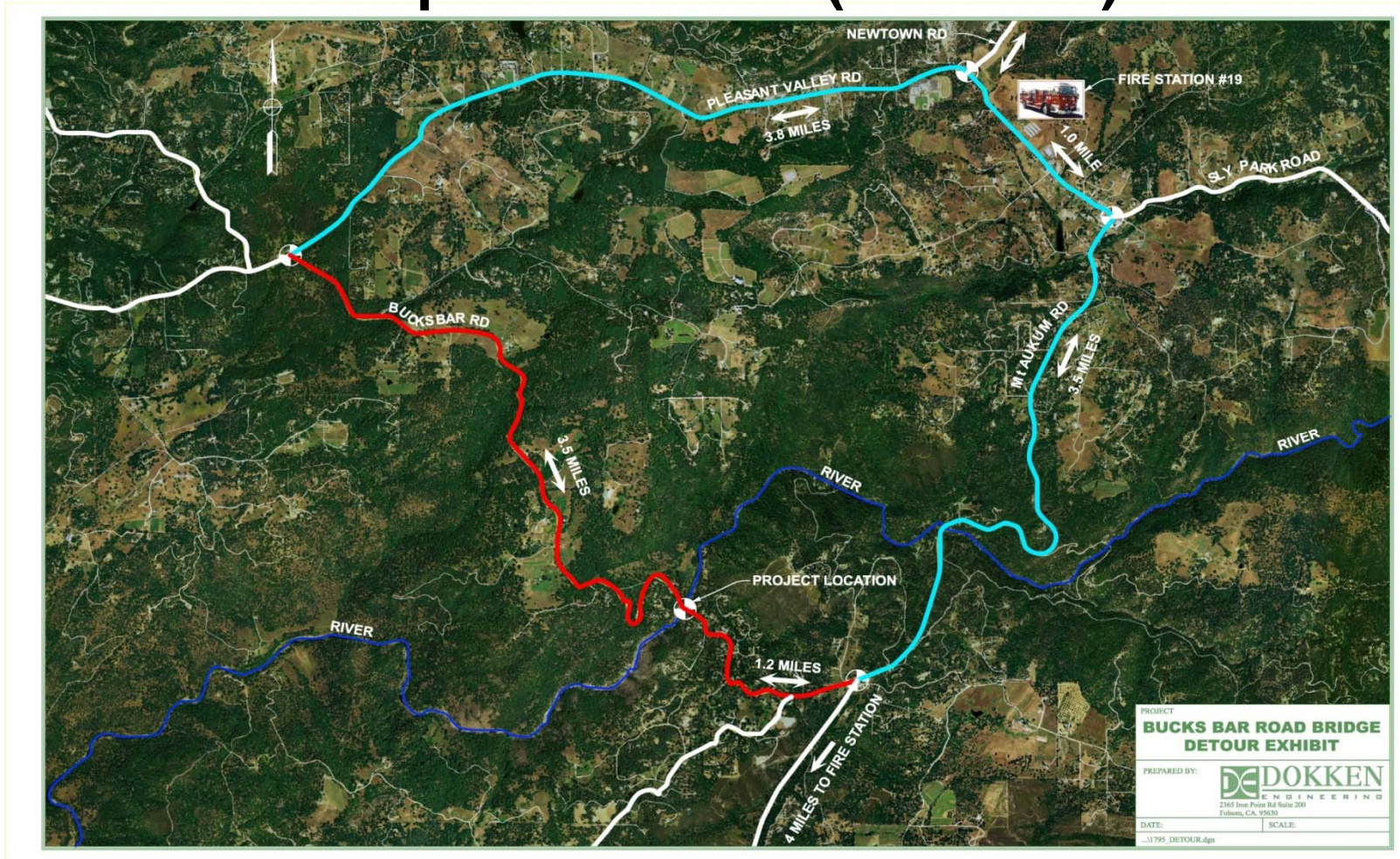
Brief Project History:

- **Obtained project funding in 2007**
- **Prepared a Feasibility Study in 2009 evaluating rehabilitation vs. replacement**
- **Replacement determined as most cost effective solution to correct deficiencies**
- **Replacement options presented to public at a meeting in 2010 including potential 3.6 mile 1-year detour to construct new bridge on alignment with 30 mph design speed**
- **Staff have evaluated public concerns and costs related to detour option**



Bucks Bar Road Bridge Replacement

Proposed Detour (3.6 miles)





Bucks Bar Road Bridge Replacement

Feasibility Study Recommendations:

Replace bridge on alignment with 30 mph design speed

Advantages

- **Minimizes project footprint**
- **Lower construction costs due to shorter bridge length**

Disadvantages

- **Need to detour traffic around site for up to 8 - 12 months**
 - **Staged construction could allow through-traffic but with estimated 30% increase in construction costs**
 - **Road closure/detour provides most efficient construction but results in greater public inconvenience**



Bucks Bar Road Bridge Replacement

Modified Alignment:

Replace bridge on alignment with 40 mph design speed

Advantages

- **Provides better stopping sight distance (increased safety)**
- **Eliminates long-term detour**

Disadvantages

- **Increased bridge length and construction cost**
- **Increased project footprint and right-of-way acquisition**



Bucks Bar Road Bridge Replacement Alignments Considered





Bucks Bar Road Bridge Replacement

Cost Comparison:

30 mph Alignment

Bridge Length = 135+/- feet

Bridge Cost (with detour, 1-season construction) = \$2.2M

Detour Cost to Public (figuring \$0.50/mile for 8 months) = \$1.8M

Net cost w/ Detour = \$4M

40 mph Alignment

Bridge Length = 175+/- feet

Bridge Cost (w/o detour, 1-season construction) = \$2.5M

Additional Right of Way = \$200k

Minimal Detour Cost to Public

Net cost w/o Detour = \$2.7M

Conclusion: 40 mph alignment is a more cost-effective option when considering detour costs to public



Bucks Bar Road Bridge Replacement

Design Criteria:

Lane Width = 12 feet

Shoulder Width = 3 feet (reduced from 8-foot standard width)

Design Speed = 40 mph

Total Bridge Deck Width = 30 feet



Bucks Bar Road Bridge Replacement

Transportation Staff Recommendation:

- **Construct a new bridge using the 40 mph roadway alignment**
- **Bridge will have 1 or 2 spans**
- **Total bridge length 175 to 220 feet (approximate)**
- **Bridge type either CIP/PS box girder or steel girder (Type Selection Report will evaluate and determine best)**
- **Construct bridge over 1 season**
- **No long-term detour (short, intermittent roadway closures will be necessary during certain construction operations regardless of roadway alignment)**



Bucks Bar Road Bridge Replacement

Next Steps:

- Proceed with selected alignment (2014)
- Complete environmental studies and document (2015)
- Right of way acquisition (2015)
- Construction (2016)



Bucks Bar Road Bridge Replacement

Questions?

