

Agenda

Meeting name Sites Reservoir Roadway/ Bridge Feasibility Design Kick Off Meeting	Subject Roadway Design Methodology and Criteria (Task Order 1)	Attendees <u>Colusa County</u> : Michael Azevedo; Gary Evans, <u>Sites</u> : Kevin Spesert
Meeting date June 10, 2020	Time 10:00 AM	<u>AECOM</u> : Vanessa Doctolero; Howard Michael; Jeff Herrin (Optional)
Location Colusa County Public Works	Project name Sites Reservoir Project	
AECOM Project number 60476765.31000	Prepared by Howard Michael/ Vanessa Doctolero	

Meeting Goal: Establish roadway design criteria for feasibility level studies.

Our current Scope of Work involves feasibility level design for roads in support of environmental impact assessments through August 31, 2020. This task will not include cost estimating beyond that previously performed. The following table lists the roads, road type, and road location. The following pages include related agenda for this kick off meeting.

ROAD	COLUSA COUNTY	GLENN COUNTY
Eastside Road	Local Access	Local Access
Road to Southern Residents (Sulfur Gap Road)	Local Access	
North Road (Access Road - Construction Bypass)		Local Access
Saddle Dam Road – North (5 - 9)		Maintenance
Saddle Dam Road – South (1 - 5)	Maintenance	Maintenance
Road to Stone Corral Recreation Area / Sites Dam (Exist. – no plans)	Local Access	
Comm Road (Existing – no plans)	Local Access	
Sites Lodoga Road (Alt 1 – with South Bridge)	Local Access	
Sites Lodoga Road (Alt 2 – with South Side Road)	Local Access	
Road to Peninsula Hills Recreation Area (Existing – no plans)	Local Access	
Road to west side Day Use Boat Ramp (Existing – no plans)	Local Access	
County Road 68 (no plans yet, only estimate)		Local Access
County Road D (no plans yet, only estimate)		Local Access
County Road 69 (no plans yet, only estimate)		Local Access
Potential Access Road A1 (no plans yet, only estimate)	Maintenance	
Potential Access Road B1 (no plans yet, only estimate)	Maintenance	
Potential Access Road C1 (no plans yet, only estimate)	Maintenance	

1) Feasibility Study (general alignment and roadway/bridge definition)

a) Roadway alignment methodology

- United States Geological Survey (USGS) publicly available LiDAR and aerial imagery
 - 1-foot contour intervals
 - 1-foot to 2-foot tolerance
 - 200 scale, not 50 scale feasibility design

From USGS website site, "There is no guarantee or warranty concerning the accuracy of these data. Users should be aware that temporal changes may have occurred since these data were collected and that some parts of these data may no longer represent actual surface conditions. Users should not use these data for critical applications without a full awareness of its limitations".

- Planning level design
- Corridor width for flexibility in redesigning final alignment/bridge layout
- Design just to support environmental studies
- Right of way/parcel impacts

b) County coordination

- Colusa County
 - Staff
 - BOS
- Glenn County
 - Staff
 - BOS

2) Roadway functional classification (Design Type)

a) Access control

b) Rural collector

- Glenn County:
 - Road 68 (I-5 to Road D) – minor collector, travel speed 35 to 45 mph
- Colusa County, Sites Lodoga Road – major collector, Class 3 bike route

c) Rural local

- Glenn County (not mapped)
 - Road D (south of Road 68), travel speed 25 to 30 mph

- Road 68, travel speed 25 to 30 mph

3) Alignment alternative criterion

- a) AASHTO or Caltrans Design Criteria
 - County unique design criteria
 - Glenn County

6.19 ROAD DESIGN STANDARDS

For new construction or projects that upgrade roadway widths, the following road design standards shall apply:

Design Hourly Volume	Traveled Way (ft.)	Paved Shoulder Each Side (ft.)	Total Roadbed Width (ft.)
100-200 vehicles/hour	22	6	34
Over 200 vehicles/hour	24	8	40

For roads on an approved bike plan, additional paved shoulder should be added so that the standard for a Type II bicycle facility is met.

- Colusa County – Caltrans Highway Design Manual (HDM) per General Plan
 - HDM references AASHTO for Local Agency Projects

b) AASHTO design speed

- Rural Local

Type of Terrain	U.S. Customary				
	Design Speed (mph) for Specified Design Volume (veh/day)				
	under 50	50 to 250	250 to 400	400 to 2,000	2,000 and over
Level	30	30	40	50	50
Rolling	20	30	30	40	40
Mountainous	20	20	20	30	30

- Rural Collector

Type of Terrain	U.S. Customary		
	Design speed (mph) for Specified Design Volume (veh/day)		
	0 to 400	400 to 2,000	over 2,000
Level	40	50	60
Rolling	30	40	50
Mountainous	20	30	40

- c) ADT
- d) Cross sections
- e) Design vehicle – California Legal Truck or STAA

- f) Travel time
- g) Standard geometry
- h) Safety
 - Longer trips encourage faster driving
- i) Long term maintenance
- j) Constructability
- k) Right of way
 - Property impacts
 - No. of properties
- l) Emergency response
- m) Evacuation route
- n) Cost

4) Roadway features

- a) Grade limitations
- b) Passing/climbing lanes
- c) Turn outs
- d) Bike lanes (5' or 6' shoulders) – County standard is 4'
- e) Overlook on fill prism in reservoir
- f) One or two navigational passageways?
- g) Upgrading non-standard features (e.g. Striping, MGS, flared end terminal systems, etc.)
- h) Drainage features (e.g. box culverts, irrigation canals, roadside ditches, etc.)

5) Roadway feasibility (10%) design

- a) Bridge and roadway (causeway) elevation over reservoir
 - 1.5 MAF (WSE = 498 ft) + 10 ft = Max. flood + wave
 - Dam crest elev. ~498 ft + 20 ft freeboard (may reduce to 15 ft – TBD) = 518 ft
- b) Flexible alignments for redefining during final design (35% to 100%)
- c) Service Area coordination
 - Preliminary geotechnical report
 - “Caltrans” Structures Preliminary Geotechnical Report
 - “Caltrans” Roadway Preliminary Geotechnical Report
 - Preliminary Pavement Evaluations for Cost Scoping in later phases
 - Preliminary Geologic Hazards Evaluations/Study for risk determination and risk assessment for cost and schedule development

- Preliminary Environmental Constraints Analysis
 - Wide study corridor for flexible alignment during preliminary design
- Preliminary Right of Way Evaluation
 - Property/owner constraints
 - Property/owner requirements/needs
- d) Cut slopes
 - Per geotechnical investigations
 - General criteria
 - 1.5:1 (H:V)
- e) Fill slopes
 - General criteria
 - 1.5:1 (H:V) with soil reinforcement
 - 2:1 (H:V)

6) Bridge features

- a) Cross section equal to approach roadway
 - Reduced shoulder width to save cost

AASHTO – 7.2.5: Long bridges, defined as bridges having an overall length in excess of 200 ft, may have a lesser width if current or projected bicycle use is very infrequent and no pedestrian facility is needed (4' min.).

- b) High winds
- c) Jump prevention fencing?
- d) Suicide prevention/emergency phone
- e) Upgrading existing bridges

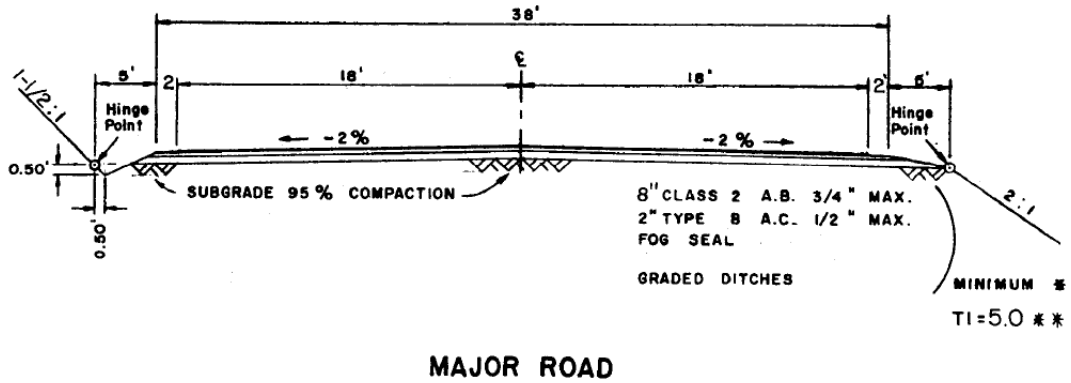


Figure 1 - Glenn County Standard Roadway Cross Section

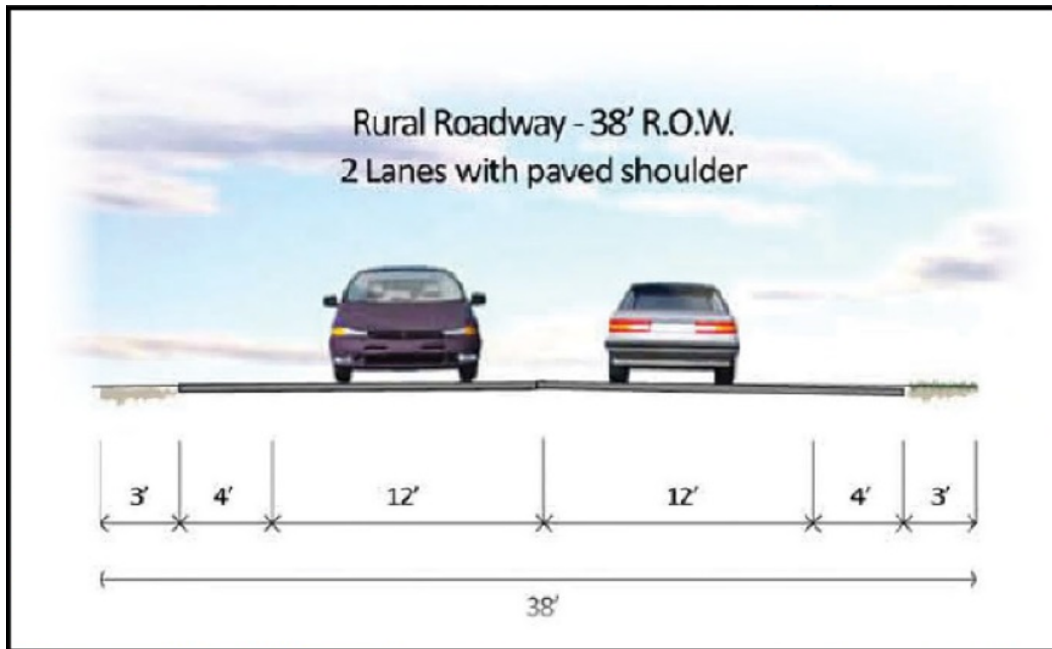


Figure 2 - Roadway Cross Section Considered to Date – Colusa County Rural Roadway