

Maclay Bridge Update



DECEMBER 2011

Planning Study Area



Corridor Study



Consultant and Primary Contacts

- Robert Peccia and Associates – Jeff Key
- Missoula County – BCC, Public Works, OPG
- Montana Department of Transportation – Sheila Ludlow, Shane Stack

Calendar

- ✓ Inter-local Agreement
- Pre-NEPA Study – January 2012 – January 2013
- Project Development
January 2013 – January 2018
- Bridge Activity
January 2018 – January 2020

What is a Corridor Study?



- Evaluates Safety, Environmental, and Design Concerns.
- Identifies Needs, Issues, Impacts, Goals, and Screening Criteria.
- Determines and Recommends Improvement Options.
- Makes Recommendations.

Corridor Study



Reports

- Existing Conditions
- Needs and Objectives
- First Level Screening
- Corridor Setting Document
- Environmental Scan

Corridor Study

Incorporates these reports, in greater detail, to determine bridge options and future environmental analysis, if necessary.

Options

- Existing Maintenance
- Rehabilitation
- Replacement
- Do Nothing

Bridge Terminology

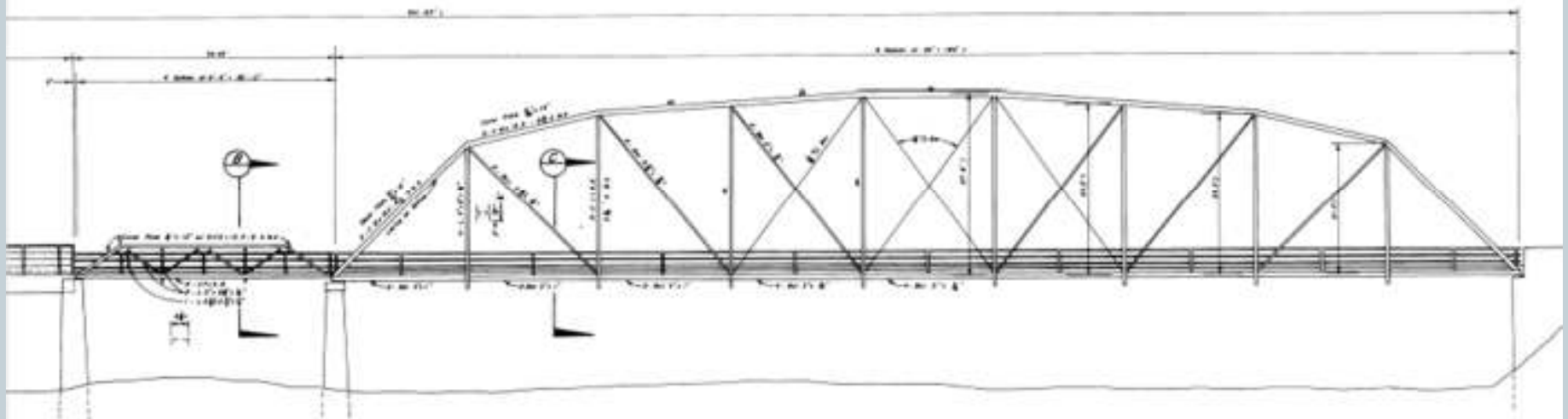


- Parker Truss
- Pony Truss
- Deck
- Stringers
- Floorbeams
- Superstructure
- Substructure

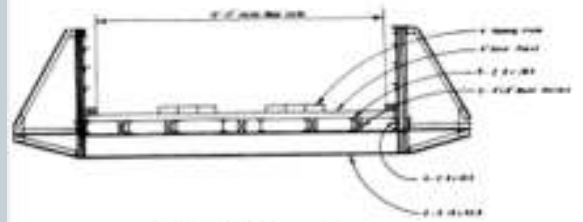
Bridge Terminology



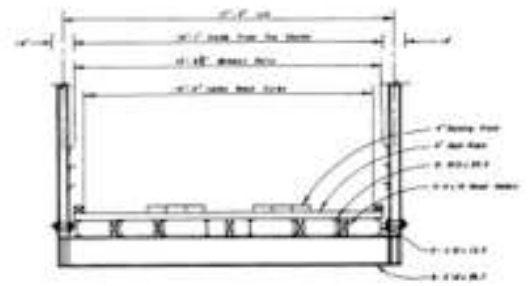
MACLAY BRIDGE



ELEVATION
SCALE 1" = 10'

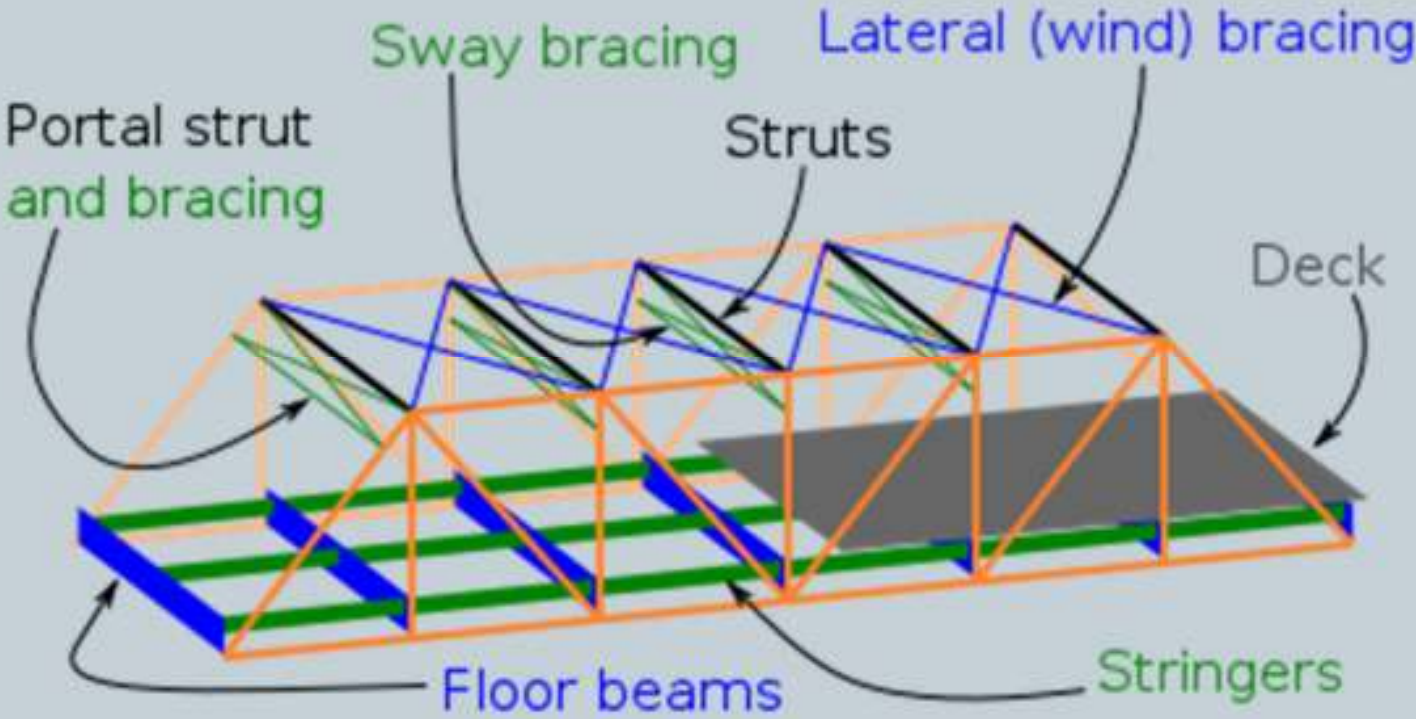


SECTION A-A
SCALE 1" = 10'



SECTION B-B
SCALE 1" = 10'

Bridge Terminology



Bridge Terminology



Bridge Terminology



Bridge Terminology



- Sufficiency Rating
- Health Index
- Structurally Deficient
- Functionally Obsolete
- Fracture Critical

Bridge Terminology



The Sufficiency Rating (SR):

- Evaluates bridge data
- Uses four separate factors to obtain one number
 - Structural adequacy
 - Functional Obsolescence
 - Level of service
 - Essentiality for public use

Bridge Terminology



The Health Index (HI):

- Was developed by CalTrans, not FHWA
- Does not relate to the functionality of the bridge
 - Load capacity
 - Horizontal and vertical clearances
 - ADT

Bridge Terminology



Structurally Deficient (SD):

- If significant load carrying elements are in poor condition due to deterioration or damage
 - Deck, Superstructure or Substructure has condition rating of 4 or less

OR,

- If water way adequacy is 2 or less

OR,

- If Structural Evaluation is 2 or less

Bridge Terminology



Functionally Obsolete (FO):

- Built to standards that are not used today
 - Load carrying capacity
 - Waterway adequacy
 - Horizontal and vertical clearances
 - Approach road alignment

Bridge Terminology



Fracture Critical (FC):

- Superstructure contains steel tension-carrying members
- If one load carrying member fails, the bridge could collapse

Bridge Terminology



L32101000+01001
Continue

Inspection Data

Sufficiency Rating : 43.2
Health Index : 96.49
Structure Status : Func Obs - Elg Repl

Inspection Due Date : 13 October 2011
(91) Inspection Frequency (months) : 24
Next Fracture Critical Due Date : 13 Oct 2011
Fracture Critical Detail : Steel trusses

NBI Inspection Data

(90) Date of Last Inspection : 13 October 2009
(90) Inspection Date :

Last Inspected By : Benjamin Williamson - 99
Inspected By :

(58) Deck Rating : 7
(59) Superstructure Rating : 6
(60) Substructure Rating : 6
(72) App Rdwy Align : 3

(68) Deck Geometry : 3
(67) Structure Rating : 4
(69) Under Clearance : N
(41) Posting Status : B

(36C) Approach Rail Rating : N
(36A) Bridge Rail Rating : 0
(36B) Transition Rating : 0
(36D) End Rail Rating : 0

(62) Culvert Rating : N
(51) Channel Rating : 7
(71) Waterway Adequacy : 8
(113) Scour Critical : 7

Unrepaired Spalls : - 1 m sq

Deck Surfacing Depth : 2.00 in

Inspection Hours

Crew Hours for inspection : 2
Helper Hours : 2
Special Crew Hours : -1
Special Equipment Hours : 1

Snooper Required : N
Snooper Hours for inspection : -1
Flagger Hours : -1

Existing Conditions Report



Examines Engineering Aspects that Impact the Bridge.

- Traffic
- Right of Way
- Location Description
- Design Standards
- Crash Rates – Missoula/Statewide
- Traffic Count and Growth Rate (MDT/Missoula Travel Demand Model) - Truck Traffic, Traffic Growth, Origination/Destination
- Utilities
- Access Control – Driveways, Intersections

Needs and Objectives



ADDRESSES GOVERNMENTAL AND LOCAL CONCERNS.

DETERMINED AT A PUBLIC WORKSHOP.

- Function – Who is traveling, where and why?
- Demand – Maintain traffic flow. Ensure motorized, non-motorized, and recreational uses.
- Geometrics – bridge width/length
- Safety
- Livability and Connectivity
- Truck Traffic

First Level Screening



Purpose

- Evaluates potential bridge locations to reduce the range to satisfy the needs and objectives.
- Second Level screening in Final Study will analyze based on traffic volumes, intersection operations, and safety impacts.

Screening Criteria

- Function
- Demand
- Safety
- Livability and Connectivity
- Truck Traffic

Corridor Setting Document



Identifies concerns and addresses feasibility of options to determine if more analysis is needed.

Roadway Aspects

- Functional Classification
- Right of Way/Jurisdiction
- Geometrics
- Traffic Data
- Safety
- Horizontal/Vertical Alignment
- Bridge Width
- Soils and Water
- Utilities

Environmental Setting

- Land Use & Ownership
- Development
- Recreation
- Vegetation
- Wildlife
- Air Quality
- Historic
- Noise
- Farmlands
- Irrigation
- 4(f) & 6(f)
- Geology and Soil
- Noxious Weeds
- Surface Waters
- Wetlands
- Floodplain

Environmental Scan



Physical Environment

- Air Quality – PM10
- Soils and Prime Farmland
- Ground and Surface Waters, Wetlands
- Floodplain

Biological Resources

- Fish and Wildlife – Threatened and Endangered Species, Species of Concern

Environmental Setting

- Demographics:
Population, Housing
- Archeological
- Historic
- Land Ownership
- Protected – 4(f) / 6(f)
- Noise
- Visual Resources

Corridor Study



- Existing Conditions Report
- Public Involvement
- Needs and Objectives
- Bridge Identification: Location, Type
- Bridge Selection
- Funding Mechanisms
- Next Steps